

**TOURIST RESORT AT MONGLA
KHULNA**

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Table of contents

Chapter 1: Introduction

1.1 Background of the Project

1.2 Project Brief

1.3 Importance of the Project

1.4 Project Rationale

1.5 Project Objective

1.6 Scope and Limitation

Chapter 2: Literature Review

2.1 Tourism

2.2 National Policy and Investment Opportunity

2.3 Aim of Tourism Policy

2.4 Tourism industry in Bangladesh

2.5 Area back ground of Mongla

2.6 Accommodation

2.7 Transportation from Dhaka

2.8 Place of Tourist Interest in Mongla

2.9 Major points of Sundarbans located near Mongla

2.10 Tourist season & Shooting

2.11 Main attractions of the Sundarban to the tourist

2.12 Difference between Resort Hotel and General Hotel

Chapter 3: Case Study

3.1 Objective of Case Study

3.2 Misool Eco Resort

3.3. Padma Resort

3.4 Jean-Michel Cousteau Fiji Islands Resort

3.5 Conclusion of Case Study

Chapter 4: Site analysis & Program analysis

4.1 Location of the site

4.2 Way to the site analysis of Mongla

4.3 Site Description

4.3.1 Existing surrounding and climate context

4.3.2 Site surrounding analysis

4.3.3 Topography

4.3.4 Vegetation

4.3.5 Consideration of planted and natural trees

4.3.6 Accessibility

4.3.7 Buildings in the vicinity

4.3.8 River breeze and land breeze factor

4.3.9 Views

4.4 The physical environment of the site

4.4.1 Climate

4.4.2 Rainfall

4.4.3 Temperature

4.4.4 Altitude

4.4.5 Relative humidity

4.5 Environmental consideration

4.5.1 Wind

4.5.2 Cyclone

4.5.3 Sea level pressure

4.5.4 Site force

4.6 Implication of the site

4.6.1 Implication Observation of the site in a chart

4.7 Project Program

4.7.1 Importance of the function

4.8 Program

4.9 Program Analysis

4.10 Functional space relationship

4.11 Functional Analysis for Cottage

4.12 Functional Analysis for Restaurant

Chapter 5: Design Consideration

5.1 Concept of the tourist resort at Mongla

5.2 Zoning

5.3 Babble

5.4 Conceptual layout

5.4.1 Conceptual layout of Individual cottages

5.4.2 Conceptual sketches of the resort

Chapter 6: Design Development

6.1 Plan

6.2 Perspectives

Figures

Figure 1: Mongla is the gate way of Sundarbans

Figure 2: Map of Sundarbans and the Mongla site

Figure 3 : Mongal Upazila Map

Figure 4: Accessibility to the Mongla site from Dhaka

Figure 5: Major points of Sundarban located near Mongla

Figure 40: Location of the site

Figure 41: Way to the site at Mongla

Figure 42: Surrounding of the site

Figure 43: Surrounding of the site analysis

Figure 44: The diagram shows how water enters the site at rainy season

Figure 45: Vegetation in the site

Figure 46: Consideration of planted and natural tress

Figure 47: Maximum trees make the site cooler

Figure 48: Existing large tress give the Road shaded (North East)

Figure 49: A natural boundary and shade form other side (North West)

Figure 50: Building vicinity and infrastructure

Figure 51: Micro Climate River breeze and land breeze factor

Figure 52: Excellent views from the site (pen aroma)

Figure 53: Average rainfall in mm at Mongla

Figure 54: Average Temperature, Minimum and Maximum Temperature

Figure 55: Maximum Humidity during in summer and pleasant in winter

Figure 56: Mongla free from cyclone storm tracks

Figure 57: Maximum Surge height at Mongla

Figure 58: Changing of river level in Bangladesh and Sea level risks at Mongla

Figure 59: Forces of the site

Figure 60: Implications from the site

Figure 61: Three types of facilities

Figure 62: Public functions

Figure 63: Private functions

Figure 64: Service area

Figure 65: Functional space relationship:

Figure 66: Function of large cottage

Figure 67: Function of small cottage

Figure 68: Restaurant

Figure 69: Restaurant Kitchen

Figure 70: Design consideration based on the site and the function

Figure 75: Zoning-Phase 1

Figure 76: Zoning-Phase 2

Figure 77: Babble- Phase 1

Figure 78: Babble- Phase 2

Figure 79: Conceptual layout with the functions

Figure 80, 81, 88: Conceptual Individual Cottages

Figure 84, 85, 86: Conceptual sketches of the Resort

Figure 87: Cottage view

Figure 88: Cottage entry from river

Figure 89: Cottage entry from walkway

Figure 90: View of Sundarban from cottage

Figure 91: View of Sundarban from cottage

Figure 92, 93, and 94: Resort perspectives

Abstract

Sundarbans the world's largest mangrove forest has got all the potentialities to uphold nature-based tourism in Bangladesh. Tourists coming from in and outside the country can get the opportunity to gaze the beauty of Sundarbans in their own eyes if proper accommodation and recreational facilities are provided which is currently unavailable in this region. On the other hand the environmental aspect of Sundarbans needs to be considered while building any structure inside the forest. Mongla is nearest upzila near Sundarbans from where the forest is easily accessible can be a suitable place for developing tourism facilities. Bangladesh Parjatan Corporation has realized this fact and planned to build a tourist resort in Mongla. This resort can work as a transitional space with proper accommodation and relaxation facilities for the tourists travelling Sundarbans. The aim of the resort is to harmonize with the beauty of Sundarbans without disrupting the ecological balance of the forest and to provide relaxation in the midst of the nature for the tourists. A nature based resort in Mongla can certainly accomplish this objective by regenerating the beauty of Sundarbans.

Chapter 1: Introduction

1.1 Project Background

Nature tourism is one of the fastest growing segments of world tourism. Nature tourism can be defined as any tourism based in natural setting and experienced in, about and for the environment. Adventure based, nature-based, wildlife based and ecotourism are some of the major kinds of nature tourism. The main reasons behind the growing popularity of nature tourism are: the widespread changes in the environmental attitude, development in the environmental education and development of environmental mass media. Gray's travel-motivation theory, gives us two motives which can help us understand why people prefer natural settings for recreation. The first motive is the desire to go from a known to an unknown place. Secondly, places that can provide traveler with special facilities that do not exist in his or her own place or residence. For example, People who live in cities are motivated to travel as tourists to wilderness areas because they need to escape from an artificial, monotonous environment. Moreover, according to Pearce, Morrison and Rutledge (1998) the intrinsic motivation of the tourists can also encourage them to pursue nature tourism. Four intrinsic tourist motives related to nature tourism are: motive to experience the environment, motive to rest and relax in pleasant settings, motive to pursue special interests and skills (scuba-diving, fishing), and motive to be healthy and fit. Meanwhile, the aim of nature tourism is to create a harmonizing relationship between human and nature without disturbing the ecological balance. All this statements underline the fact that nature tourism is indeed a important part of world tourism in today's world.

Sundarbans the world's largest mangrove forest can certainly play a great role in promoting nature based tourism in Bangladesh. Sundarbans has got all the ingredients to satisfy the intrinsic and extrinsic motivating factors of the tourists. Sundarbans provide the opportunity to sail in the solitude of wilderness through its hundreds of river channel, to learn more about the Royal Bengal Tiger and the possibility to view the majestic creature, to sight the estuarine crocodile on the mudflat banks, a number of deer and to learn more about the mangrove forest. But due to lack of proper accommodation and transportation facilities many of the foreign and domestic tourists do not find it feasible to visit the Sundarbans. Again it will be threatening for the ecology of Sundarbans if any resorts or such is built inside the forest. As a result recently Bangladesh

Parjatan Corporation has planned to build a tourist resort in Mongla which is the nearest upzila of Sundarbans to encourage the travelers to visit the place. This resort will give the nature tourists an opportunity to relax in the midst of a natural setting which is different from the usual city-work-home environment. This is good news for the tourists in and outside the country. (<http://cmsdata.iucn.org/downloads/tourism.pdf>)

1.2. Project Brief:

The project has been titled as the Tourist Resort at Mongla. The site for the project is located at the Mongla bondor, Mongla, Bagerhat. Bangladesh Parjatan Corporation (BPS) is the client of this project. The project will be funded by Bangladesh Government. Approximate area of this project is around 12.95 acres. The project can be categorized as the resort for recreation and Sundarbans sightseeing. The client still has no fixed budget for this project, but they presume it may cost approximately 12.75cores. A final budget will be prepared after the cost estimation, based on the selected design.

1.3. Importance of the Project

Mongla is the second sea port of Bangladesh located in Bagerhat District the south-western part of Bangladesh. It was formerly located at khulna, about 11 miles (18 km) upstream on the Pussur River, but it is now located 48 km south of Khulna city, as established on 11 December 1954. The Port is surrounded as well as well protected by the Sundarbans mangrove forest. The name Mongla originated from Mongla River presently known as Mongla Nulla. Mongla River is originated from the Pussur and Rampal rivers. (http://en.wikipedia.org/wiki/Port_of_Mongla)

Mongla is the gateway to the Sundarbans. Sundarbans is well-connected with Mongla through waterways. Tourists can sail through the rivers of Pussur and Rampal to move towards the Sundarbans. People touring the Sundarbans come to the Mongla port through the Khulna-Mongla highway and hire water transports to visit the forest. As a result Mongla has become an important tourist hub. In general trip to the Sundarbans is a tiresome fixture. Tourists have to

walk in the forests for long hours. Moreover tourists want to get the real experience of the Sundarbans by staying close to the forest for some days. So, an intermediate space is very important for the tourists where they can revive themselves as well as can get the authentic exposure of the Sundarbans. A resort at Mongla can play the role of such a transitional space where the tourists can relax in the midst of nature. But still the authority has not come up with any proper accommodation and recreation facilities in Mongla.

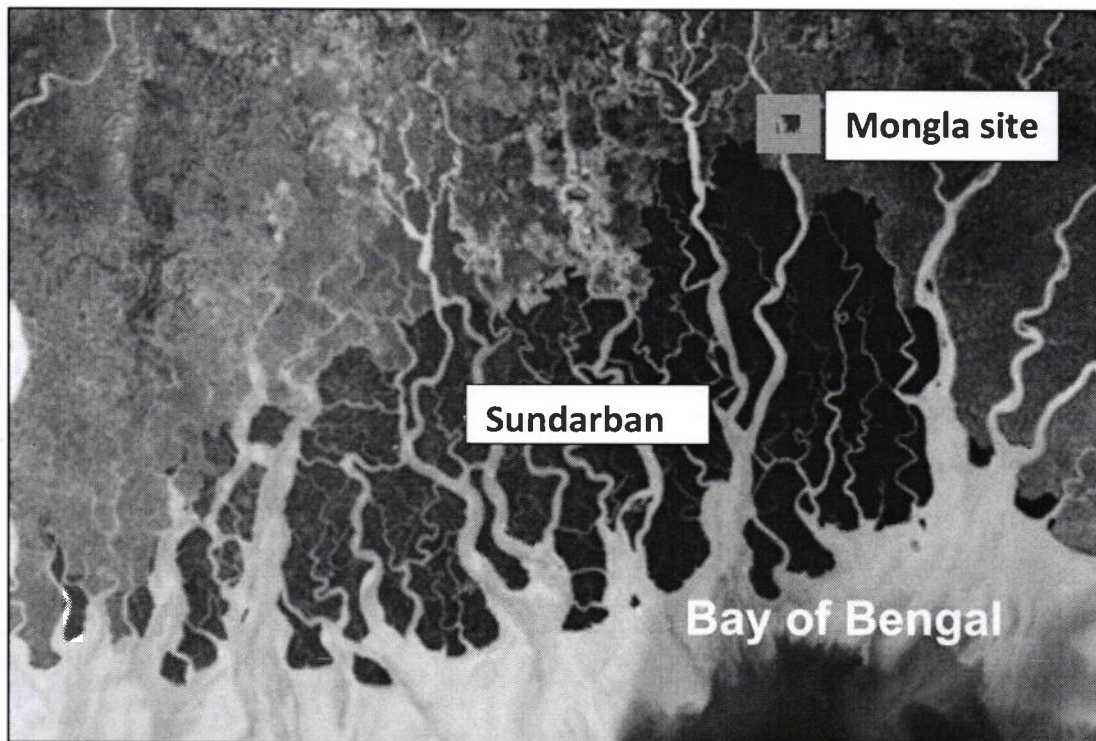


Figure 1: Mongla is the gate way of Sundarbans

Sundarbans has got all the ingredients that a tourist desires. Some of the features of Sundarbans Includes:

1. The wilderness and condition of one of the largest mangrove forest on the world.
2. The variety of wildlife (specially birds).
3. The importance of one of the remaining natural habitats of the Royal Bengal Tiger, education

and conservation awareness initiatives and studies.

4. Life in the river, the Riverside experience in Sundarbans.

As a result by developing proper accommodation and transportation facilities in Mongla Sundarbans can be turned into the ultimate tourist destination in Bangladesh.

1.4. Project Rationale:

Sundarbans is the haven for photographers and travelers, is the biggest mangrove forest in the world and is a treasure island of biodiversity. But it is a matter great regret that few tourists are able to gaze this beauty in their own eyes due to lack of accommodation facilities. Tourists coming from in and outside the country do not get any proper relaxing place near Sundarbans. As a result the tour to Sundarbans becomes very hectic. On the other hand we need to consider the environmental aspect while building any structure inside the Sundarbans. It will be threatening for the ecology of the Sundarbans if any resorts or hotels or any such structure is built inside the Sundarbans. Moreover, Bangladesh Parjatan Corporation does not encourage any such buildings inside the forest. This problem can be solved by building proper accommodation facilities near Sundarbans.

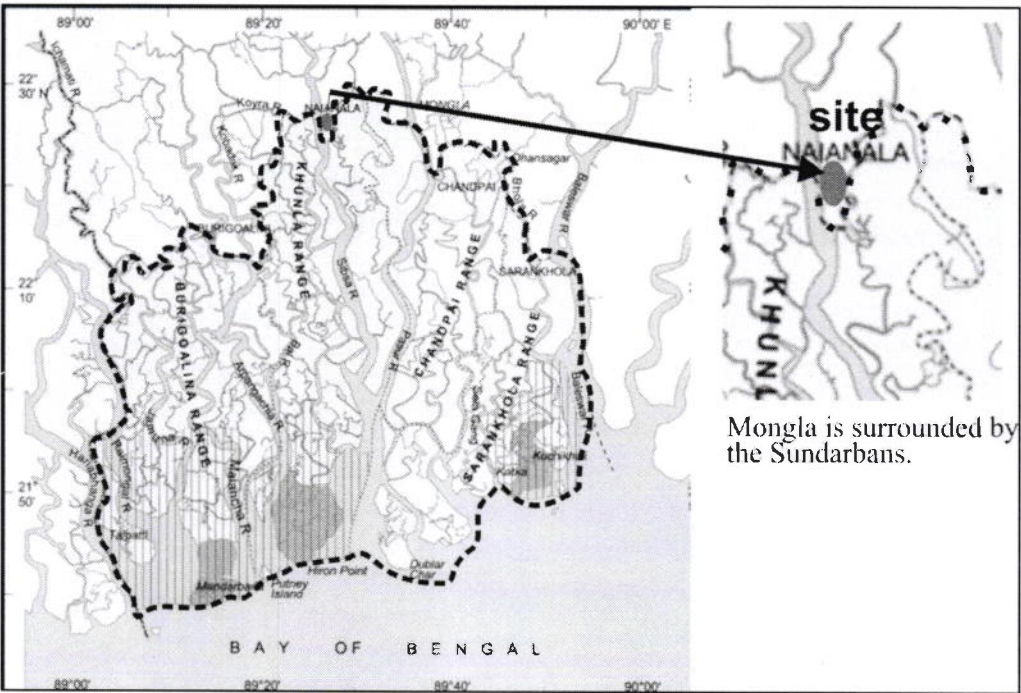


Figure 2: Map of Sundarban and the Mongla site

Mongla is nearest upzila near Sundarbans from where the forest is easily accessible. Moreover, Mongla is surrounded by the Sundarbans. As a result the natural beauty of the Sundarbans can be explored from Mongla. Furthermore, the natural aspects of the Sundarbans such as moonlit night or monsoon in the forest can also be experienced from here. A Three most tourist point of Sundarbans such as Hiron Point, Koromjol Point, Katka Point can be visited by boat from Mongla. That's why the resort proposed by Parjatan Corporation at Mongla can be an ideal tourist resort having comfortable accommodations, recreational facilities, catering, sightseeing and other facilities for the visitors. Tourist can use this resort as an intermediate space while visiting Sundarbans. The plan is to build this resort in a natural surrounding near the Pusur and Mongla Nula River.

The Sundarbans has been declared a UNESCO World Heritage Site. The Sundarbans cover an area of 38,500 sq km, of which about one-third is covered in water/marsh areas. Since 1966 the Sundarbans have been a wildlife sanctuary, and it is estimated that there are now 400 Royal Bengal tigers and about 30,000 spotted deer in the area.

(http://www.parjatanbd.com/print_details.php?id=27)

This forest has got the credit of having large number of Sundari trees and some claim that Sundarban derived its name from these trees. One who likes nature in its wildest forms, for him Sundarbans is the prime location which is not to be missed. Sundarbans offers an extra ordinary wild journey for a life time to recall.

Meandering rivers, springs, creeks and beautiful estuaries, Sundarbans is ruled by the unique natural beauty of its surroundings. Wildlife flourishes in Sundarbans, leading with the Royal Bengal Tiger. The mighty Royal Bengal Tiger, ultimate and unopposed king of the forest, is majestic, cunning and merciless to its prey. It is the natural habitat of many other famous wild life animals like jungle fowl, giant lizards, spotted deer, wild boar, crocodiles and many more that the nature lovers would get a very good chance to have a close look. Migratory group of Siberian ducks is an attraction in some seasons, a beautiful scene of these ducks flying over sail boats fully loaded with many items like timber, fuel wood, honey, fish and shell adding to the serene natural attractiveness of the Sundarbans.

The main tourist point is Nilkamal known also as Hiron Point for watching vociferous wild animals and natural beauty. Katka is another place where wild animals move freely and is also good for bird watching. Vast area of verdant valleys starting from Katka to tiger point in Kachikhali provides opportunities for adventurous wild trekking. Tin Kona Island is well known for deer and wild tiger and Dublar Char Island for fishermen. It is a beautiful island where flocks of spotted deer are frequently seen to graze. It is also the perfect place for the ordinary holiday makers who desire to rest or roam around at will to refresh their mind and feast their eyes with the rich treasure that nature has so fondly bestowed.

1.5 Project Objectives

- Relaxation in the midst of the nature for the tourists.
- Promoting nature based- tourism in the Sundarbans without disrupting the ecological balance of the forest.
- Building a transitional space with proper accommodation and relaxation facilities for the tourists travelling Sundarbans.
- Endorsing visitors' consciousness towards the observation of the forest.
- Creating alternative income generation ways for the local people.
- Designing and implementing a program of habitat management and restoration.

1.6 Scope and Limitation:

The proposed site for the project is enriched with natural amenities such as the view of river and the Sundarbans gives a great opportunity to design a resort for the tourists visiting the Sundarbans. The site for the proposed resort has also been chosen considering the environmental factors of the Sundarbans. The project itself has great potentialities as it can encourage numerous foreign and local tourists to visit the Sundarbans which can certainly brought about positive changes in the socio-economic conditions of the inhabitants of Mongla and the Sundarbans. However, there are some limitations of the project too. This project is handled by Bangladesh Parjatan Corporation which is a public authority and there is a trend of bureaucracy in the public organizations of Bangladesh which may extend the time frame of the development of this project. Last of all I had time and resource constraints to properly find out the possibilities and threats of this project.

Chapter 2: Literature Review

2.1. Tourism:

Tourism is travel for recreational, leisure or business purpose. International Association of Science Experts in Tourism (AIEST) says. "Tourism is the sum of the phenomena and relationships arising from the travel and stay of non-residents in so far as they do not lead to permanent residence and are not connected with any earning activity." Tourism is the business of transport, care, feeding, and entertainment of the tourist." People who travel to and stay in places outside their usual environment for more than twenty four hours and not more than one consecutive year for leisure, business and other purpose can be called as tourists. Tourism is an Industry which aims in enhancing social and geographical mobility of the human by performing a verity of functions to fulfill various human motives with a view to earning profit.

2.2 National Policy and Investment Opportunities:

Government of Bangladesh recognized tourism as an industry and declared a National Tourism Policy for the development of domestic and international tourism in Bangladesh. The policy underlines marketing strategies and development of infrastructures and human resources.

Bangladesh Parjatan Corporation, National Tourism Organization (NTO) need to play the role as a promoter of the industry in a more efficient way. They should effectively engage in creating facilities for local and foreign investors to develop the tourism sector. Some of the potential areas for such investments need to be outlined and welcome International investors to Bangladesh in order to participate in the development of profitable tourism sector.

In order to attract tourist to visit Bangladesh through marketing of its tourist attractions the following facilities will also have to be developed in the country:

- Arrangement of accommodation
- Arrangement of safe travel within the country by roads, river and airways

- Arrangement of food and drinks
- Arrangement of recreation environment
- Arrangement of sight-seeing tours
- Arrangement of sale of souvenirs or handicrafts
- Arrangement of safety and security for tourist keeping recreations of movement within the country to the minimum

(http://www.unescap.org/ttdw/Publications/TPTS_pubs/pub_1748/pub_1748_CR-A.pdf)

2.3 Aim of Tourism Policy:

The national tourism policy in our country has been introduced with certain objectives which have been discussed below:

- Increasing foreign exchange earnings by attracting foreign tourist.
- Increasing interest in tourism activities among the people and creating low cost tourists facilities for them.
- Development, preservation and maintenance of tourism resources of the country.
- Taking steps for alleviation of poverty by creating employment opportunities for greater number of people.
- Creating a favorable image of Bangladesh abroad.
- Opening up a recognized field of investment for capital.
- Creating recreational facilities for foreign tourist and people.
- Development the handicrafts and cottage industries consolidation of national solidarity and consensus through fostering and development of culture, heritage and of the country.

(Sources: National Tourism Policy, MINISTRY OF CIVIL AVIATION AND TOURISM Bangladesh.)

Although all those objectives are yet to be achieved by the tourism industry of Bangladesh but I would certainly considering these factors while developing architectural concepts for my project.

2.4 Tourism Industry in Bangladesh:

Despite of greater possibilities Bangladesh is still one of the countries in the South Asian region with the least number of tourist arrivals and with the lowest revenue earned from the tourism industry. Due to the potential of fast expansion in the tourism sector, it was identified as the thrust Sector by the government. The Lonely Planet Guide, world's leading published travel guide elected Bangladesh as one of the top ten interesting travel destinations of the world in 2009. In Bangladesh, real GDP growth for travel & tourism economy is expected to be 1.7 percent in 2010 and to average 6.4% per annum over the coming 10 years. According to the World Travel and Tourism Council estimate, the GDP contribution is 3.9% (BDT 265.9bn) in 2010. (<http://traavelbangladesh.blogspot.com/2011/03/new-approach-needed-to-develop.html>).

Growth trend of tourism in current decade shows a sharp increase in both domestic and foreign tourists in spectacular natural reserves of Cox's Bazar, the Islands in Teknaf and St.Martin, the largest mangroves of the Sundarbans, the Chittagong Hill Tracts, and wetlands of the Sylhet district. Besides these nature reserves, many cultural and heritage sites located across the country have been gradually attracting domestic and foreign tourists. According to Bangladesh Parjatan Corporation, there are at least 43 tourist destinations in Bangladesh with natural, cultural and archeological interests. According to WTTC, Bangladesh Travel & Tourism economy is ranked as:

- 82 in absolute size worldwide;
- 173 in relative contribution to national economies;
- 23 in long-term (10-year) growth.

(<http://traavelbangladesh.blogspot.com/2011/03/new-approach-needed-to-develop.html>)

Tourism in Bangladesh is primarily characterized by outdoor and nature tourism peaking during the winter months and short public holidays. In 2005-2006 periods, a total of 757,640 visitors travelled to different natural reserves and national parks. Peak period, recorded as November-March was 76% of total visitors in 2006. This is primarily a weekend tourism market, with travelers coming by overnight bus from Dhaka on Thursday night and returning to Dhaka on Saturday night. An example of increase of tourism in St. Martin's Island indicates that 83,000

travelers visited in 2007 and 123,390 in 2008. Bengali nature lovers interested in these attractions represent roughly less than 1% of the visitors to Cox's Bazar and 5% of the visitors traveling to St. Martin's Island in 2008. Thus, potential of revenues from tourism alone opens up a new impetus to the country's economy.

(http://www.annextravel.com/index.php?option=com_content&view=article&id=258)

2.5 Area Background of Mongla:

Mongla Upazila (Bagerhat district) with an area of 1461.22 km is bounded by Rampal upazila on the north, the Bay of Bengal on the south, Morrelganj and Sarankhola upazilas on the east, Dacope upazila on the west. Main rivers in this area are Pasur and Mongla. Mongla (Town) stands on the river Pashur. It is the second biggest seaport of the country. It consists of 9 wards and 13 mahallas. Mongla municipality was established in 1991. The area of the town is 17.79 km. Mongla upazila consists of 1 municipality 7 union parishads, 37 mouzas and 77 villages. (http://en.wikipedia.org/wiki/Mongla_Upazila)

2.6 Accommodation:

Currently there is a limited range of accommodation facilities in Mongla. Most of the Accommodation facilities of Mongla are situated near the Mongla port. There is one Pusur Hotel near the Mongla port where a very small number of tourists can stay. Other than that there are no such hotels and resorts in Mongla for the tourists.

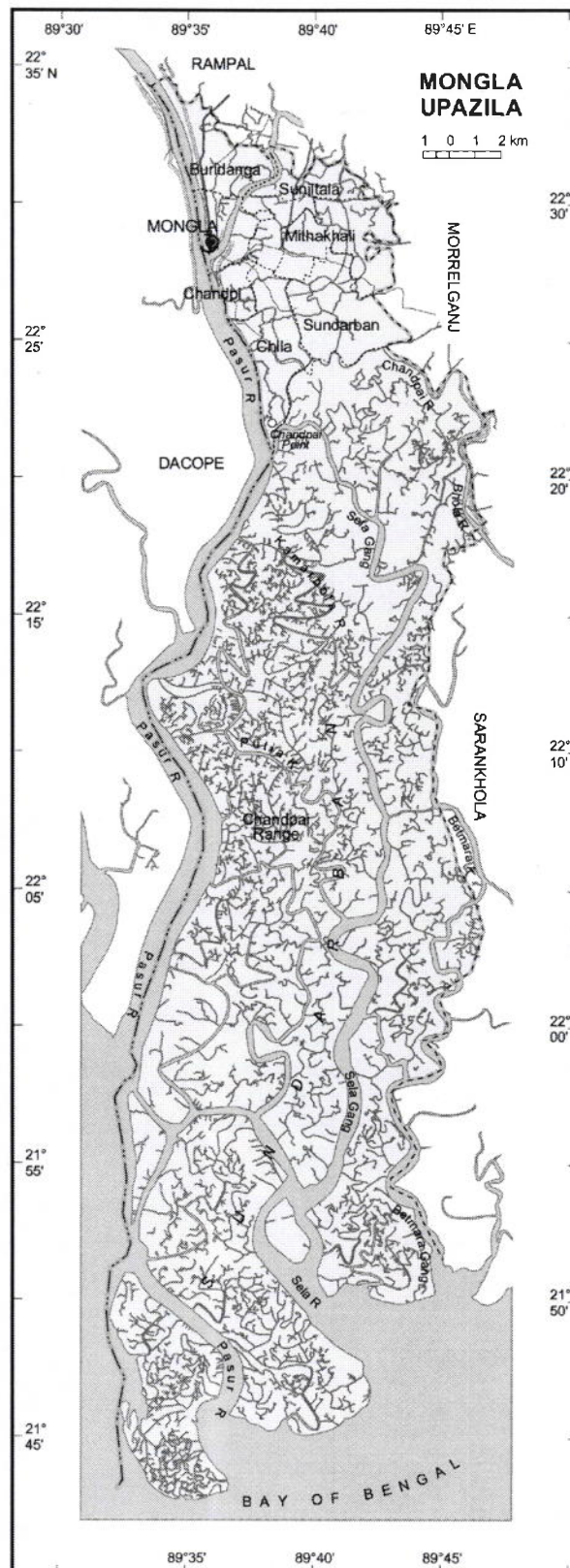


Figure 3 : Mongal Upazila Map

2.7 Accessibility from Dhaka:

Mongla is accessible from Dhaka by road, by water and by air. If one wishes to reach Mongla by Bus than he or she can choose from luxurious bus services. After reaching Khulna one can take the option of small buses or reserve a CNG to reach Mongla through Khulna-Mongla highway. Instead of buses one can choose trains towards Khulna from Dhaka which is a much safer option. A jet-set businessman flying from Dhaka would reach Jessore in just under half an hour. Then he can travel by car for a distance of about 70km to the Mongla. A leisurely visitor would however; tempted to travel by “Rocket” steamer from Dhaka a journey of 20 hours through the scenic southern part of the country which can be observed from the steamers during the day time.

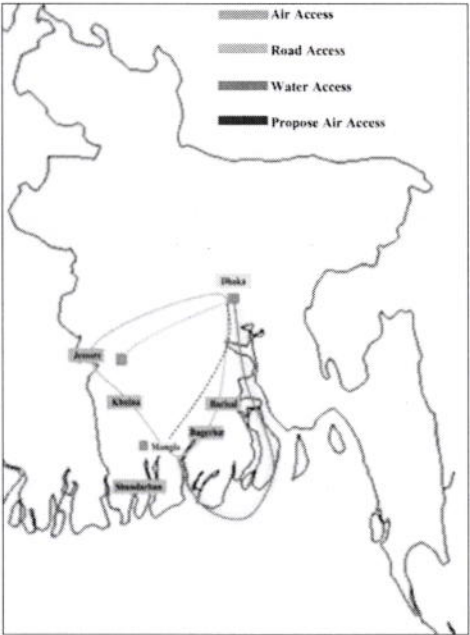


Figure 4: Accessibility to the Mongla site from Dhaka

2.8 Place of Tourist Interest in Mongla:

Mongla is the nearest Upzila from Sundarban. Three of the most important tourist point of Sundarbans located very near from Mongla. Moreover, The Shat Gambuj Mosque of Bagerhat is accessible from Mongla.

2.9 Major points of Sundarbans located near Mongla:

Some of the major sights of Sundarbans that can be visited from the proposed resort at Mongla:

Katka-Kachikhali: Katka-Kachikhali gives a good image because of its beautiful khals, flore, fauna and proximity to the Bay of Bengal. This khals offers possibilities to see deer, monkeys, masked fin-foot, monitor lizard, snakes and chance to see a tiger crossing a khal. There is a beach and an observation tower on the open grass land where large number of deer can be seen and sometimes tiger can be found. This is the most hot spot of Sundarban. It can be reached within seven hours by boat from the resort at Mongla.

Dubla Island: It is the only permissible largest fishing center especially for dry fish for winter season. Every year in November in full moon Rash mela a religious festival takes place here.

Nil Komol / Hiron Point: It is another good potential area for tourists. This is the place from where the World Heritage Sites plaque has been erected. This place can be reached by boat from the resort within six hours.

Mandarbaria: It is situated in the south west side of the Sundarban and it is very isolated and quiet. Tourists like this place for exclusive wilderness. It takes around 12 hours by boat to reach this place from the resort.

Karamjal: It is the main entry gate to the Sundarban Reserved Forest where number of day visitors comes. This place can be developed as a visitor and interpretation center. Some wildlife has already been kept there in captivity; there is a mangrove arboretum in Karamjal. This place can be visited from the Mongla port within only three hours.

Fluorescent plankton: During the winter months quite often the river water in the sea face is found to glow at night, due to the pressure of millions of microorganisms. The entire atmosphere turns into a fairyland. Even the forests flanking the steams are illuminated by swarms of fireflies. This beauty can also be observed from the resort located in the Mongla.

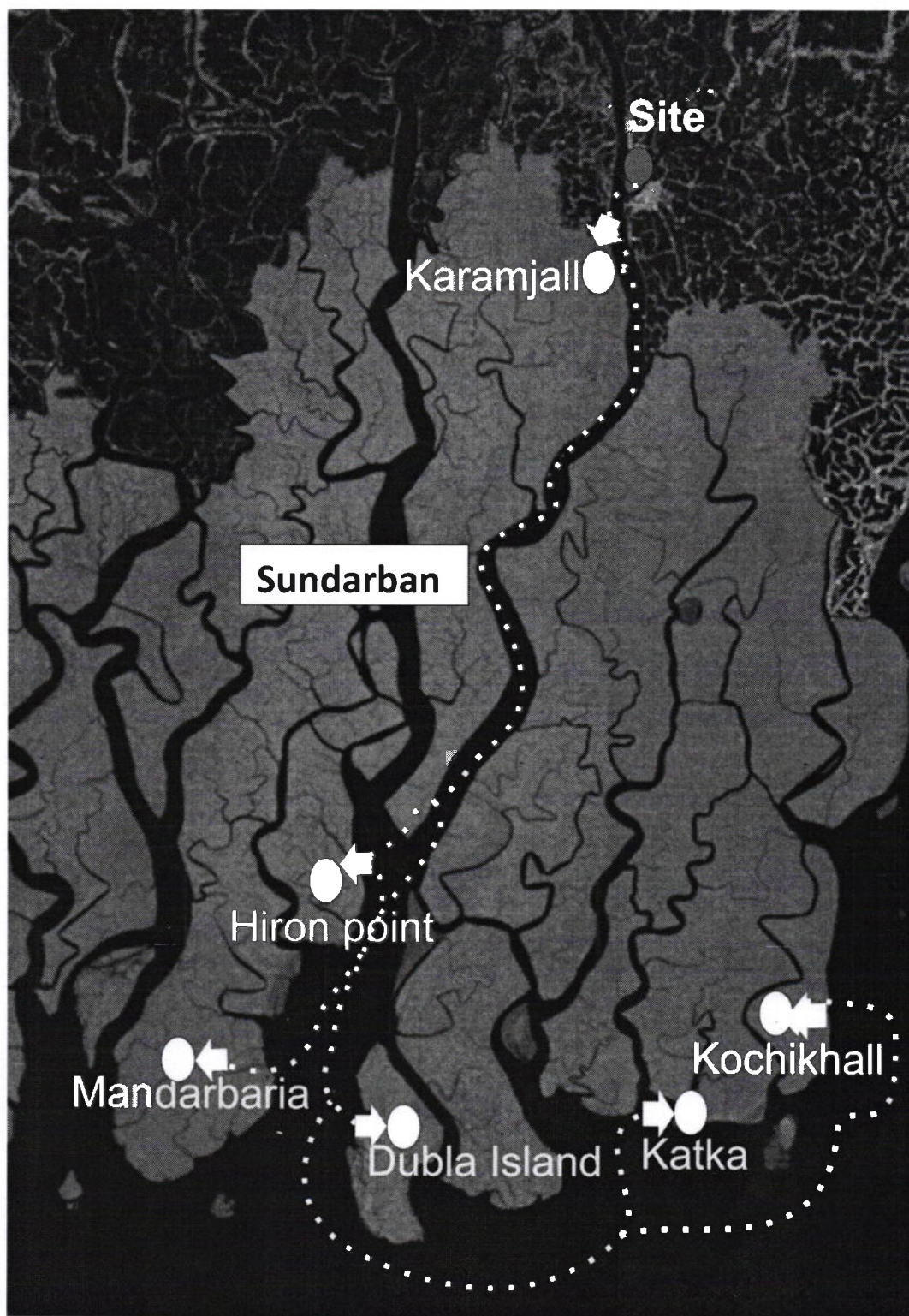


Figure 5: Major points of Sundarban located near Mongla

2.10 Tourist season & Shooting:

Best time to visit the Sundarbans is from November to March. Exciting honey collection season is during April-May because of full monsoon is from June to September. The annual rainfall average between 65" and 70". During ebb-tide the forest becomes bare by 6-7 feet and at high tide (30 miles an hour) the entire territory of the forest floats on water. Hunting is prohibited by law in the country for the preservation of wildlife. Certain species of birds, however, can be shot with prior permission of the Divisional Forest Officer, Khulna.

2.11 Main attractions of the Sundarban to the tourist:

Wildlife photography including photography of the famous Royal Bengal Tiger, wildlife viewing, boating inside the forest will call recordings, nature study, meeting fishermen, wood-cutters and honey-collectors, peace and tranquility in the wilderness, seeing the world's largest mangrove forest and the riverine beauty.

Some other occasional attractions:

Bonbibí Mela (January): A unique festive occasion with music, theaters and fairs.

Dubla Rash Purnima Mela: Dependent on Luner Calendar, normally beginning of November.

Bird-watching Tours: Bangladesh is situated on the cross-path of two major migratory flyways. The coastal areas, including Sundarban Forest, are important breeding, resting and feeding places for a large variety of resident and migratory birds.

Fishing with Trained Otters: This unique traditional fishing technique is only found in Bangladesh.

2.12 Difference between Resort Hotel and General Hotel:

It may be true that both the hotel and the resort offer temporary lodging facilities to guests and visitors, but they differ in their basic purpose. Fundamentally resort is a place of recourse whereas a hotel is a temporary residence while away from home. Although, nowadays the seven star and some of the five star hotels are creating a resort environment within the hotel area.

Resorts are places or towns or commercial establishments that provide relaxation and recreation over and above the accommodation, meals and other basic amenities. The characteristic of resort is that it *combines a hotel and a variety of recreations*; it serves food, drink, lodging, sports, entertainment, relaxation such as spa and shopping. Generally hotels located inside resorts are known as resort hotels.



Figure 6: showing structural difference between hotels and resorts

Some of the major differences between hotel and resorts are discussed below:

Nature of Residence: Hotels are prepared to provide soothing residence for short term periods. They are the best choices when you are staying out of town for a few days. The same is not the case with resorts with their focus on being much more than just accommodation places. Resorts usually have shopping complexes also. Destination resorts are examples of comprehensive resorts. Such resorts are self-contained with shopping facilities and restaurants and for making the visitors love their splendid trips. These resorts are huge like the Atlantis in Bahamas and charge sizeable fares for the conveniences they provide.

Location: Hotels often focus on attracting business conferences and business travelers. Hotels are often located in the midst of cities, near popular attractions or near airports but resorts are generally found situated near popular vacation or tourist attractions. Since hotels can also be booked for more formal purposes like imparting training to employees or holding business conventions, they are placed in the vicinity of convention facilities or contain convention facilities within. In contrast, resorts pride themselves on having scenic backdrops to accentuate the "get away from it all" feeling for visitors.

Purpose of stay: Persons who travel from one place to another place with a purpose will book in to hotels. The purpose of their travel may be to attend a conference, a function, a wedding or an official meeting or even it can be vacation. On the other hand people specifically frequent resorts for relaxation or for recreation. Persons who are unable to spend the night at their home are likely to spend the night in a hotel room. They may or may not stay with their families. This is because of the fact that they are away from home for that matter. The purpose of staying in a resort is entirely different; people who want to spend their vacation or holidays with their family in a particular city or a particular country are likely to stay in a holiday resort. Holiday resort is a self-contained resort that attempts to provide most of its clients wants while remaining with them including entertainment, sports, relaxation and shopping and tour arrangements; some even facilitate with shopping and tour guides.

Amenities: In some places, resorts indulge their guests more than their hotel counterparts by offering things such as freebies like tickets to the most reputed theme parks in the area. They are generally affiliated with guided tours to the most magnificent local attractions or historic city sites. Some, but not all, hotels have started providing such tours as a part of travel packages.

Choice of vacation: A resort is a full-fledged amenity laden choice that provides for many anticipated needs of tourists including nearby entertainment and shopping. A resort can also include a hotel as one of its features. Resort rooms may not be numbered but they are generally numbered in hotels.

Costs: A hotel can be an excellent option for the stay of a few nights, but an extended stay during holidays can be more pleasingly enjoyed in a resort. Resorts are known to come with

higher costs but in remote locations security can be an issue and resorts can be the best choice for families and anyone with security concerns.

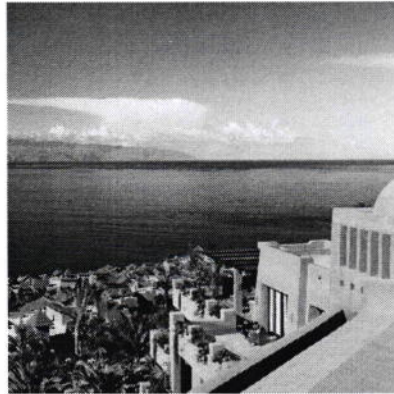


Figure 7: showing resorts are very close to nature and hotel far from nature

Some hotels without full resort facilities used to market them as resorts, which may mislead tourists. Though, hotel is usually a central feature of a resort, the defining characteristic of a resort hotel is that it exists purely to serve other attractions required for relaxation or recreation. Advance booking is highly recommended in the case of resorts for a very comfortable stay.

(<http://www.differencebetween.com/difference-between-resort-and-hotel/>)

Chapter 3: Case Study

In this section I am going to discuss and analyze three different case studies that will facilitate my final Design.

3.1 Objective of Case Study:

- To find different method of structural solution and traditional forms.
- To find examples of vernacular architecture with nice natural environment.
- To understand the scale and scope of work of a resort hotel.
- To understand the program and its functional relationship.

The following case studies are included in this chapter:

- Misool Eco Resort
Architect: Viv Faithfull from WH Architects.
- Jean-Michel Cousteau Fiji Islands Resort
Architect: Richard C Murphy
- Padma Resort
Local: Lohajong, Munshigonj

3.2 Misool Eco Resort:

Misool Eco Resort is an exclusive dive resort and conservation center located in the southern part of Raja Ampat, Indonesia. It is located at a private resort island Batbitim, which is fringe with powder-white beaches, protected by stunning clear lagoons and abundant reefs. With just nine guest holiday cottages, Misool Eco Resort is able to offer exclusive luxury diving holidays, surrounded by the world's richest reefs.

Objective of Misoo Eco Resort:

Misool Eco Resort is deeply committed to a policy of environmental and social responsibility. We seek to provide exceptional and enriching experiences in a sustainable environment. We aim to protect and revitalize both our natural surroundings and the community in which we operate. We are committed to demonstrating to our hosts, our guests, and the local government that tourism can support a local economy with much more favorable terms than mining, logging, overfishing, or shark finning.

Location:

Misoo Eco Resort is one of the most remote dive resort on the planet, located in pristine surrounding. island Batbitim in the southern region of Raja Ampet.Misool Eco Resort island and scuba doving sites are surrounded by their own 1220sq km(465sq mi/300,000) No-Take Zone.Resort located 165km (105miles) from the nearst port, and the nearest village is 20 km away by boat.

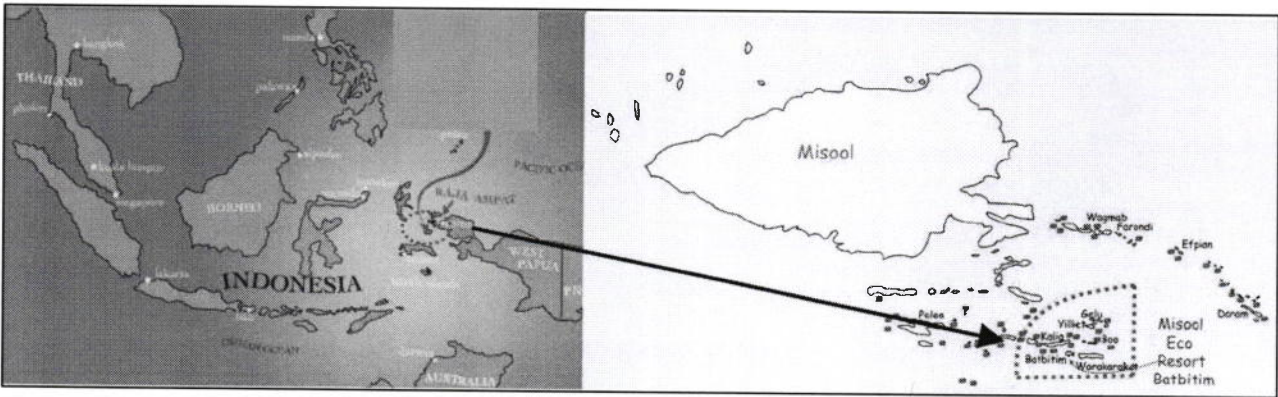


Figure 8 :Location mape of Misool Eco Resort

Layout Plan of Misool Eco Resort:



Figure 9: Plan of Misool Eco Resort

Major Fintios:

- Accommodation. (Large and small cottage)
- Restararant.(Sea side)
- Recreational Facilities
- Scubba Diving Facilites.
- Eco-tourism facilities.

Space organization:

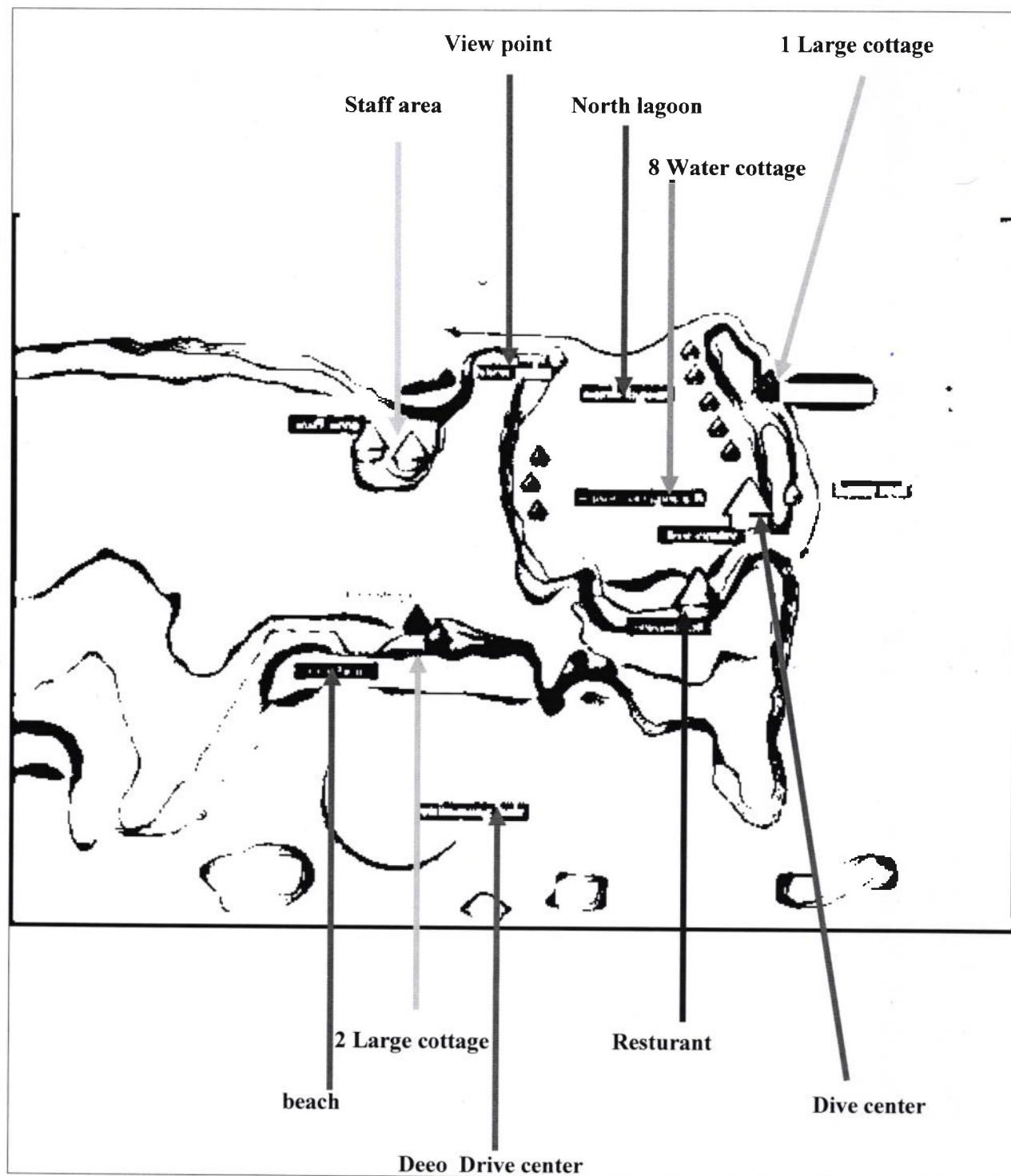


Figure 10: Space Function relationship

Site-building-Relationship & Space organization:

The resort has been designed with two major types of cottages. One of them is large cottages which is known as villas located at the top of the mountains. There are three large villas in this resort. Each of them have been built in three difeernt mountains. Guests of these villas are provided with all the faciltiies with a utmost piority. These resorts give the guests all the privacy they needed. The guests of these resort can gaze the whole sea side from the top of the mountains. The guests here can have the combined atmosphere of sea and hill. Another type of cottages available in this resort are the small cottages. Small cottages are located near the seaside beside the lagoon. The guests of these cottages can have the best Natural surrondings. The entry way of these cottages are across the mountains but the front view of these cottages are enriched with seaside views. All of these cottages are facilitated with same natural view supplemented by the richest cotral reef of the world. The resturant is located at the center of the resort which is as well as the entry point of the resort.

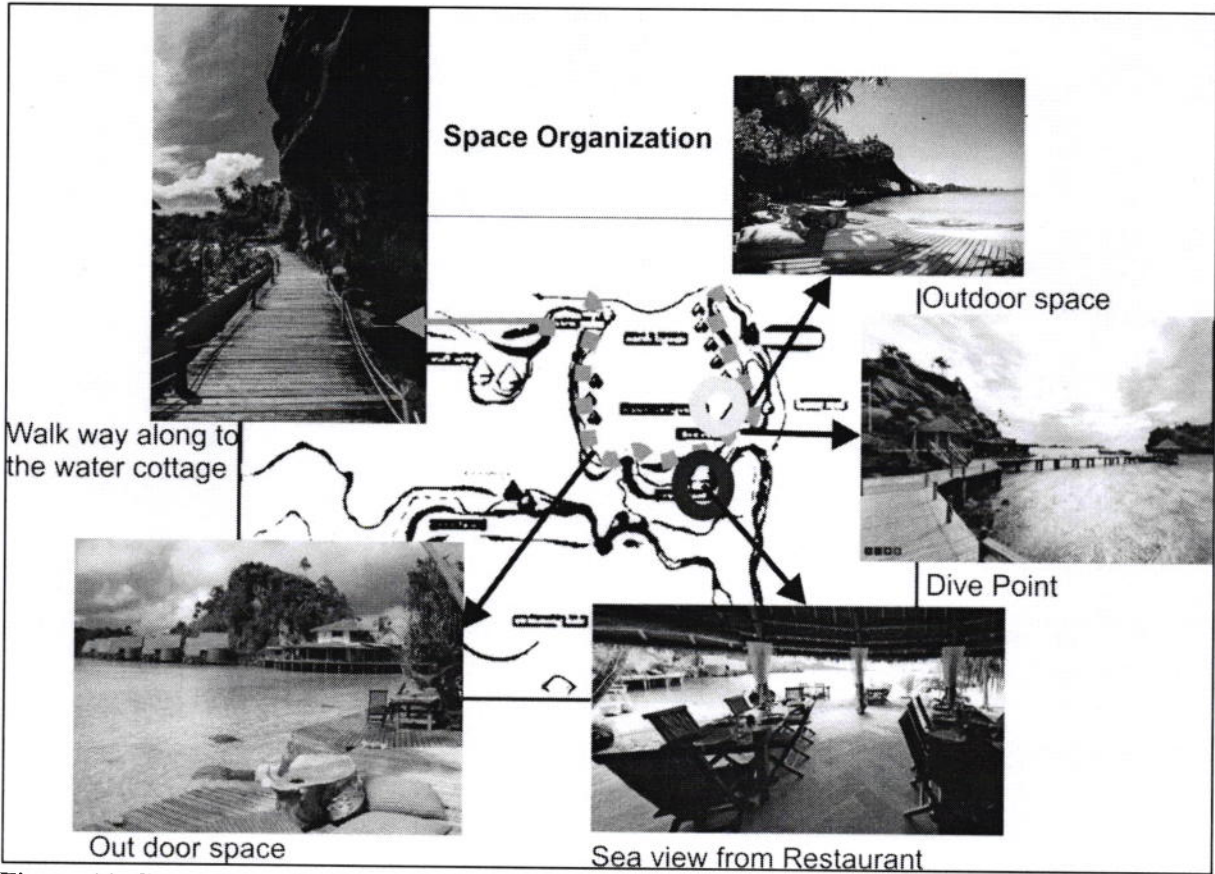


Figure 11: Space Organization of Misool Eco Resort

Designed by Viv Faithful from WH Architects, Misool Eco Resort offers two levels of accommodation. Eight Water Cottages are located in the North Lagoon, built on stilts over the water, with private verandas and luxurious comfort and stunning views. The resort also has one deluxe villa, Villa Tabisasu, located on the eastern edge of the North Lagoon, which offers more space and privacy. Beach-front restaurant is located on the North Beach, looking out over a shallow turquoise lagoon. Most of the fine carpentry work, such as making doors, windows, and furniture, was done locally.

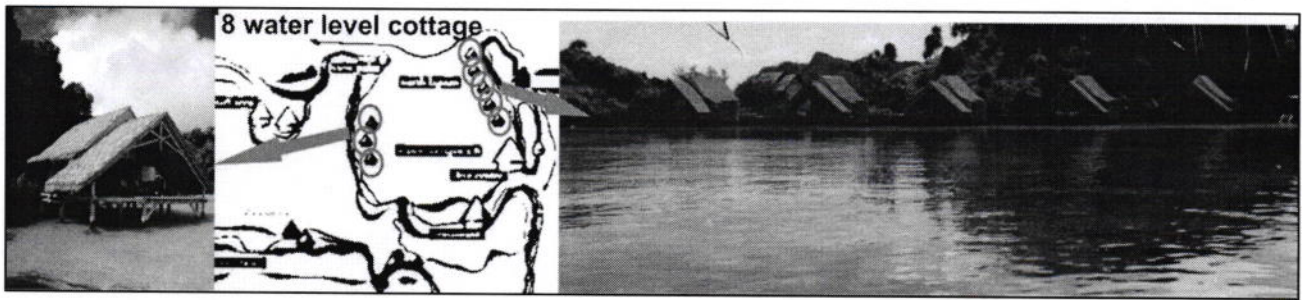


Figure 12: Location of Water Cottage

All the large cottages of the resort which is called as the villa located at the hilltop points. On the other hand the small cottages including the restaurant of the resort is located near the seaside. A river channel has been passed between the two mountains and the top of this river channel has been used as the scuba diving point of this resort. This resort can only be accessible through water transports.

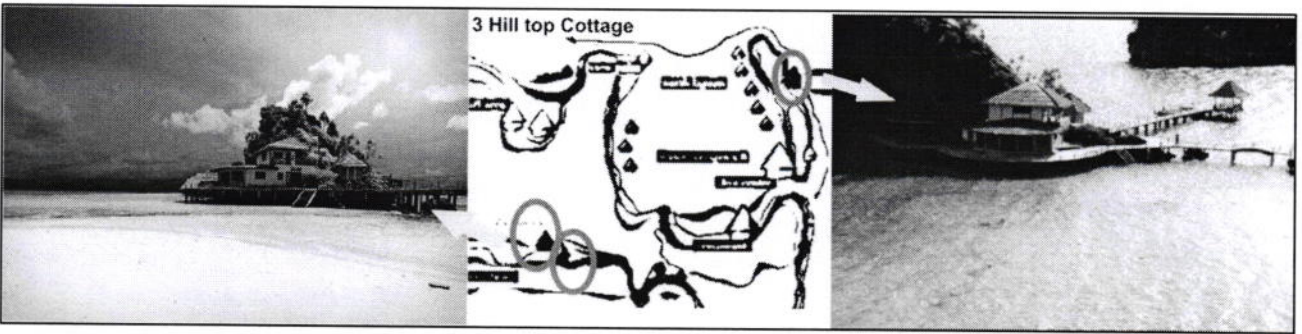


Figure 13: Location of Hill Top Cottage

Fuction of Water Cottage:

All the cottage have the basis functional arrangment of semi-open space like verandah or terrace, bedroom, living come dining, dressing, toilet and finally a pavilion to enjoy the sea view.

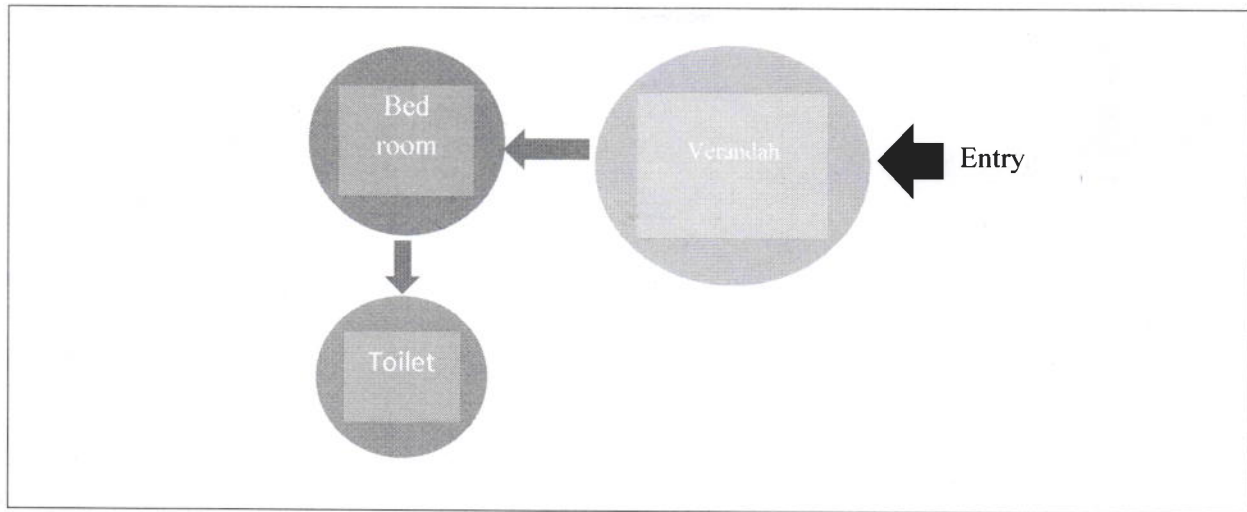


Figure 14: Functional flow iagram of Hill Top cottage

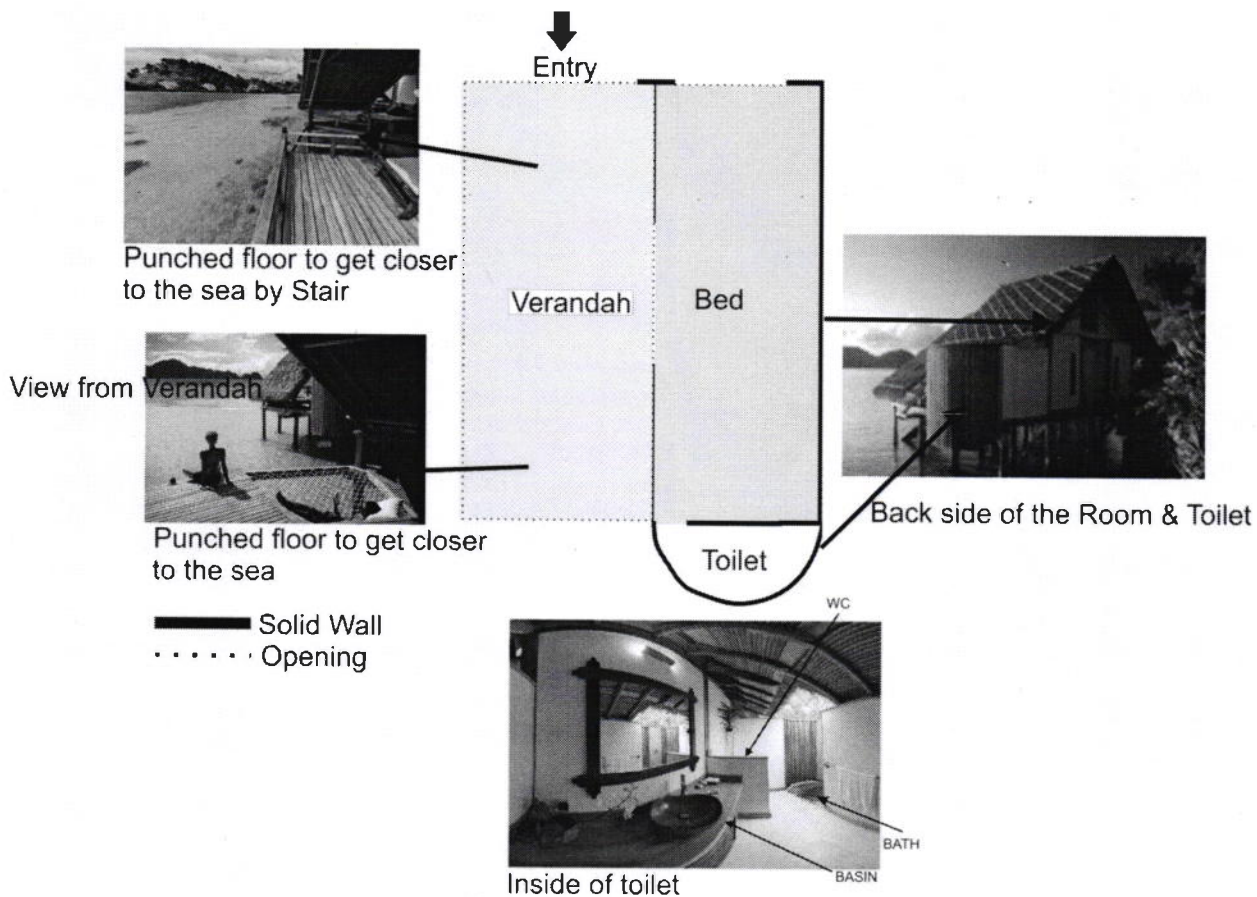


Figure 15:Lay out plan of Water cottgae

Fuction of Hill Top Cottage:

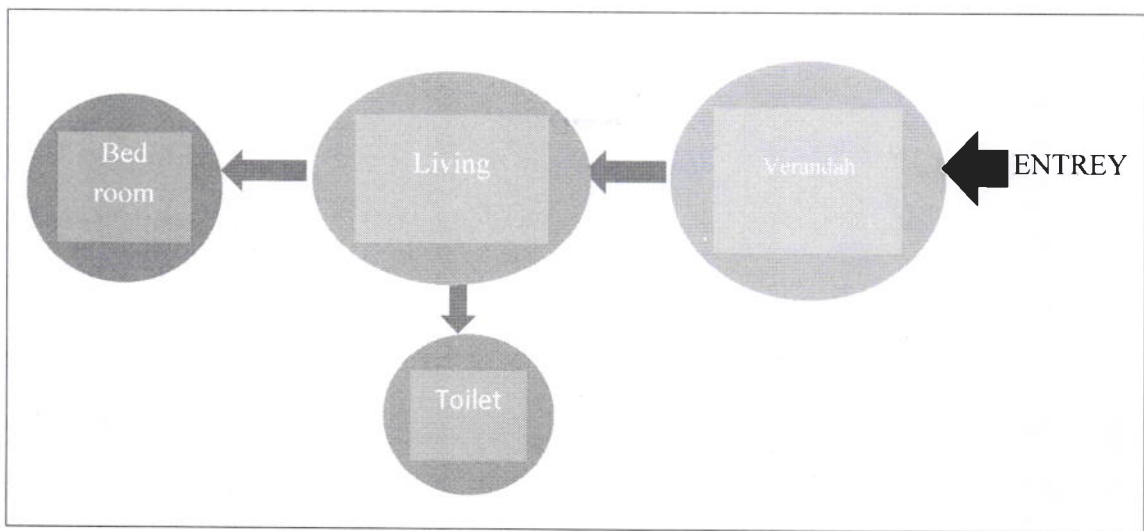


Figure 16 :Functional flow diagram of Hill Top cottage

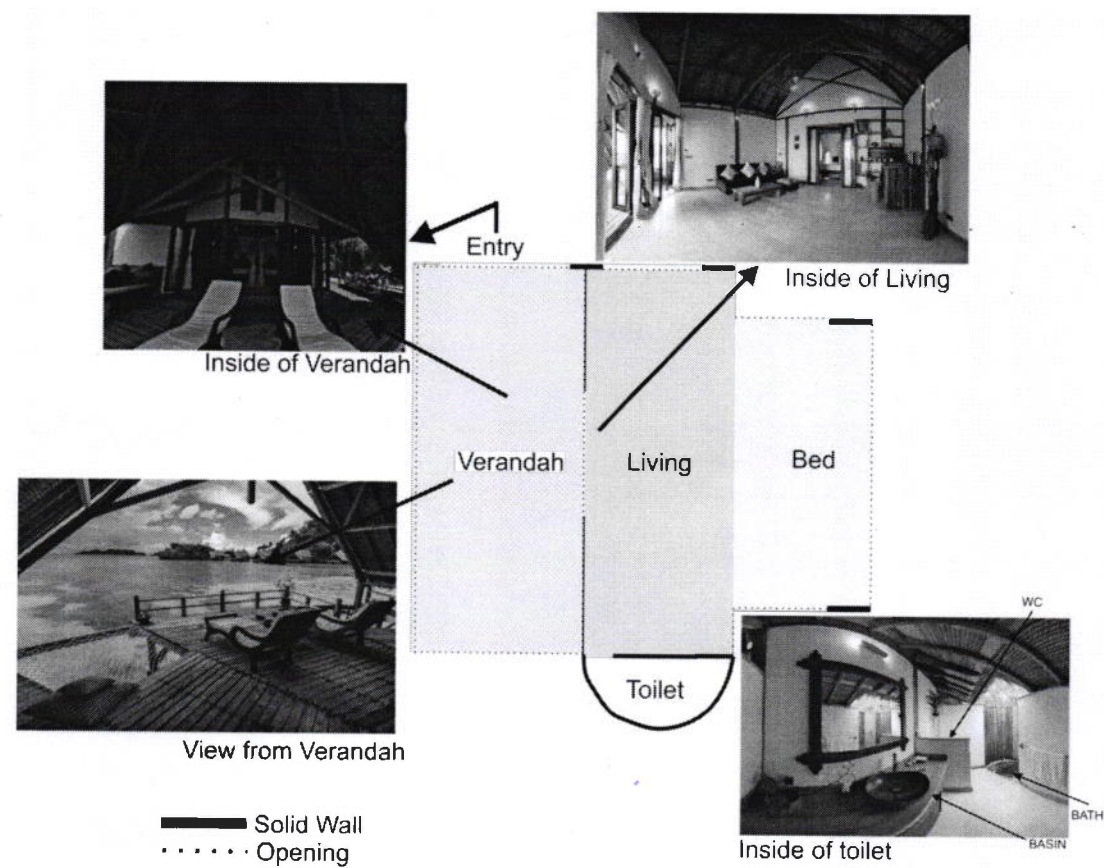


Figure 17:Lay out plan of Hill Top cottgae

Structural System:

The piers of the cottages have been constructed from a salvaged 22-inch metal pipe. With the exception of a few furniture samples and plywood, all the wood used for resort construction has been salvaged hardwoods. They excavated driftwood buried under beach sand, and then milled every single piece by hand with a portable saw mill. This wood has been purchased directly from the local people rather than logging conglomerates.

The cottages use natural thatch roofing – a locally made product, and an excellent insulator. In order to lower the energy consumption required for cooling, the cottages have deep verandahs and low roof lines, thus decreasing the amount of solar heat which enters the building. The steeply pitched roofs and open eaves create a natural ventilation system. Cavity walls are insulated with coconut fibers and treated with borax, a natural termite deterrent.



Figure 18 :Structural System

Identity:

The idea was to make every cottage identical with their appearance. To do that they solved many cottage-plan in different ways, but keeping the basic functional aspect in order. Many have been solved by treating the façade, by doing height variations.

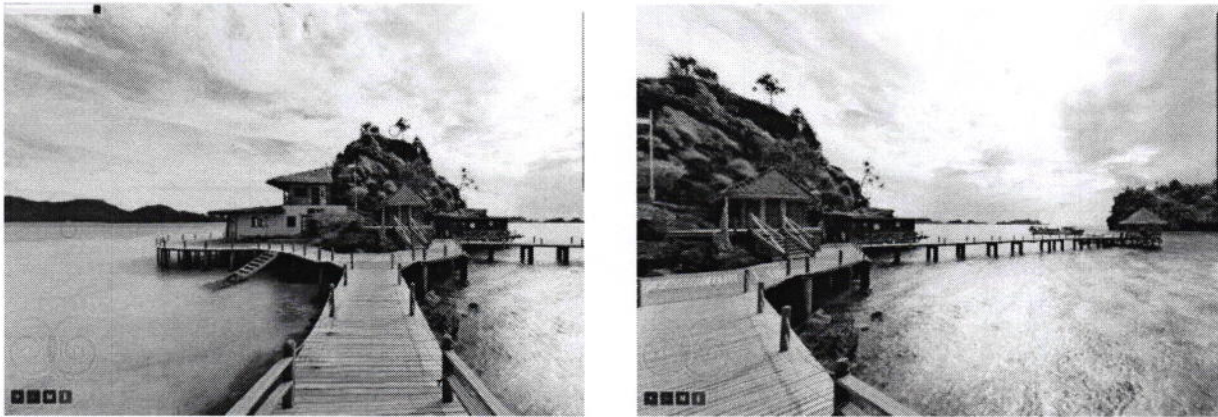


Figure 19: Front space of Restaurant & Drive center

Other Specialities:

In order to lessen the impact on the surrounding nature, the plants and trees are sprayed with an unsavory mix of tobacco and water. The inorganic matter is returned to Sorong for proper recycling and disposal. The amount of toxins released into the waste system is also reduced with provided biodegradable soaps and shampoos. The guests are provided with a sterilized reusable water bottle, refilled at no cost with safe drinking water, in order to keep the island free from disposable plastic water bottles.

In agreement with local hosts, the folks from Misool Eco Resort leased more than 400 km of sea surrounding Batbitim. This includes many of Raja Ampat's finest dive sites, including the Manta Cleaning Station, Boo, Fiabacet, Gorgonian Passage, and Yillet. Within this area, all fishing, shark finning, harvesting of turtle eggs and shellfish are strictly prohibited. All boats are required to practice reef-safe anchoring.

Unfortunately, since the resort is located on an isolated location, the power is mostly provided by generators which use fossil fuels. However, they are trying different alternatives in order to provide power for the resort. Examples are a small wind turbine which provides the power for the staff bungalows, and a small solar panel provides additional power for the Dive Centre in the evenings. Most interestingly, the folks from Misool Eco Resort claim that they hope to switch from fossil fuels to biodiesel fuel from locally produced coconut oil.

The resort has a drilled well, and a desalination unit, but since the drinkable water is scarce on the island they used water-saving shower heads and taps in order to lessen the consumption. Grey water is processed with waste water gardens and then redirected to flush toilets.



Positive:

- ECO system has been introduced in the resort by using sustainable energy consumption & recycling methods.
- Interrelationship between the Sea & the cottages is effectively used.
- Functional relationship of space is pleasant and very close to nature.
- Successful implementation of the diving theme.
- The cottages use natural thatch roofing-a locally made product and an excellent insulator.

- All the water cottages are properly shaded.

Negative:

- Biodiversity of the area have been hampered by the construction of the resort.
- The resort is not easily accessible due to its isolated location.
- Temporally fossil fuels are used run the generators which are against the low of eco resort.

3.3. Padma Resort:

Padma resort is one of the most popular resorts in Bangladesh. It has been developed with 22 acres of low land which goes down under water during the summer time. The compound is submerged under the river offers a fabulous environment. It has very nice and tranquil view of the river and surrounding areas. It is a nice spot for picnic or a day outings with family and friends



Figure 20: Cottage view inside

Objectives of Padma Resort:

Padma resort is designed for people who are in desperate need for relaxation and spending some time away from the daily drudgery.

Location:

The specialty for the resort is its location just a hundred minutes' drive from Dhaka to Padma river. Padma Resort situated opposite of Lohajang police station across the river 6 kilometer east from the Mowa point towards Monshigonj. From Lohajang police station it's just a five minutes boat drive to Padma Resort.

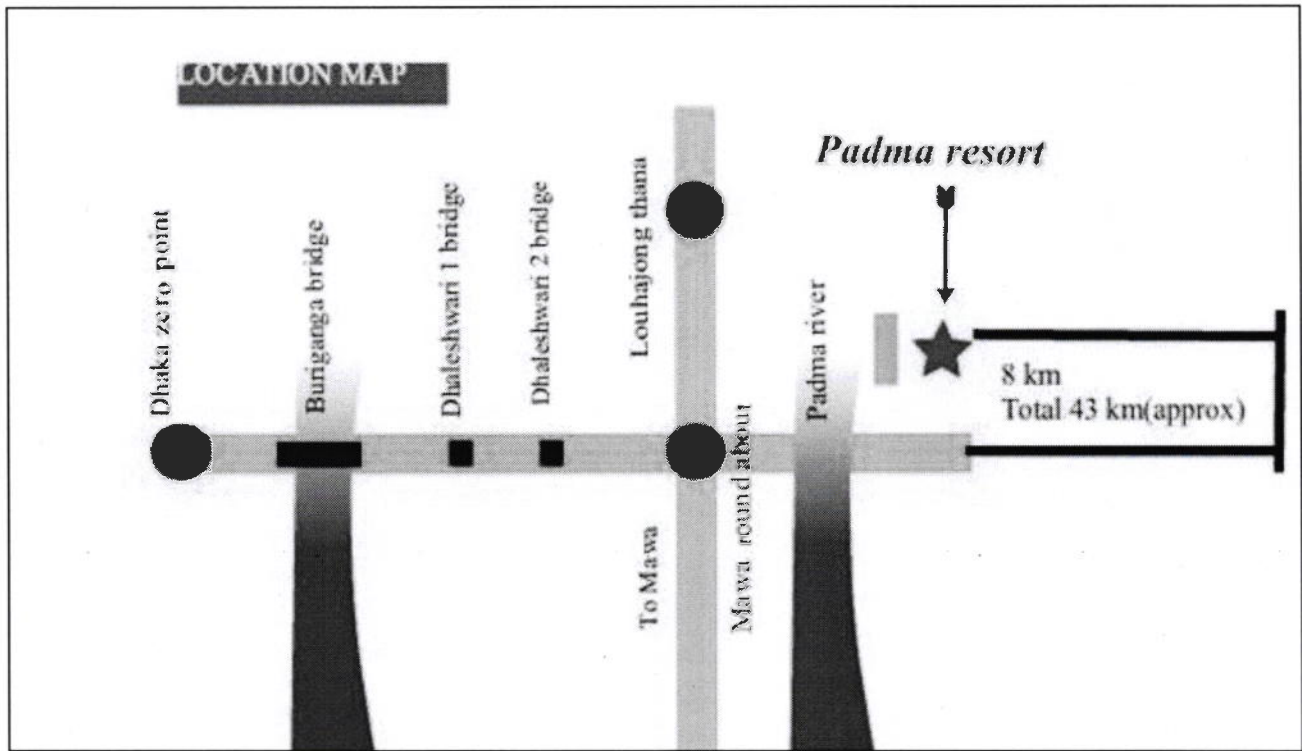


Figure 21: Site surrounding and access to the resort

Major Function:

- Accommodation
- Restaurant
- Kitchen
- Resort office

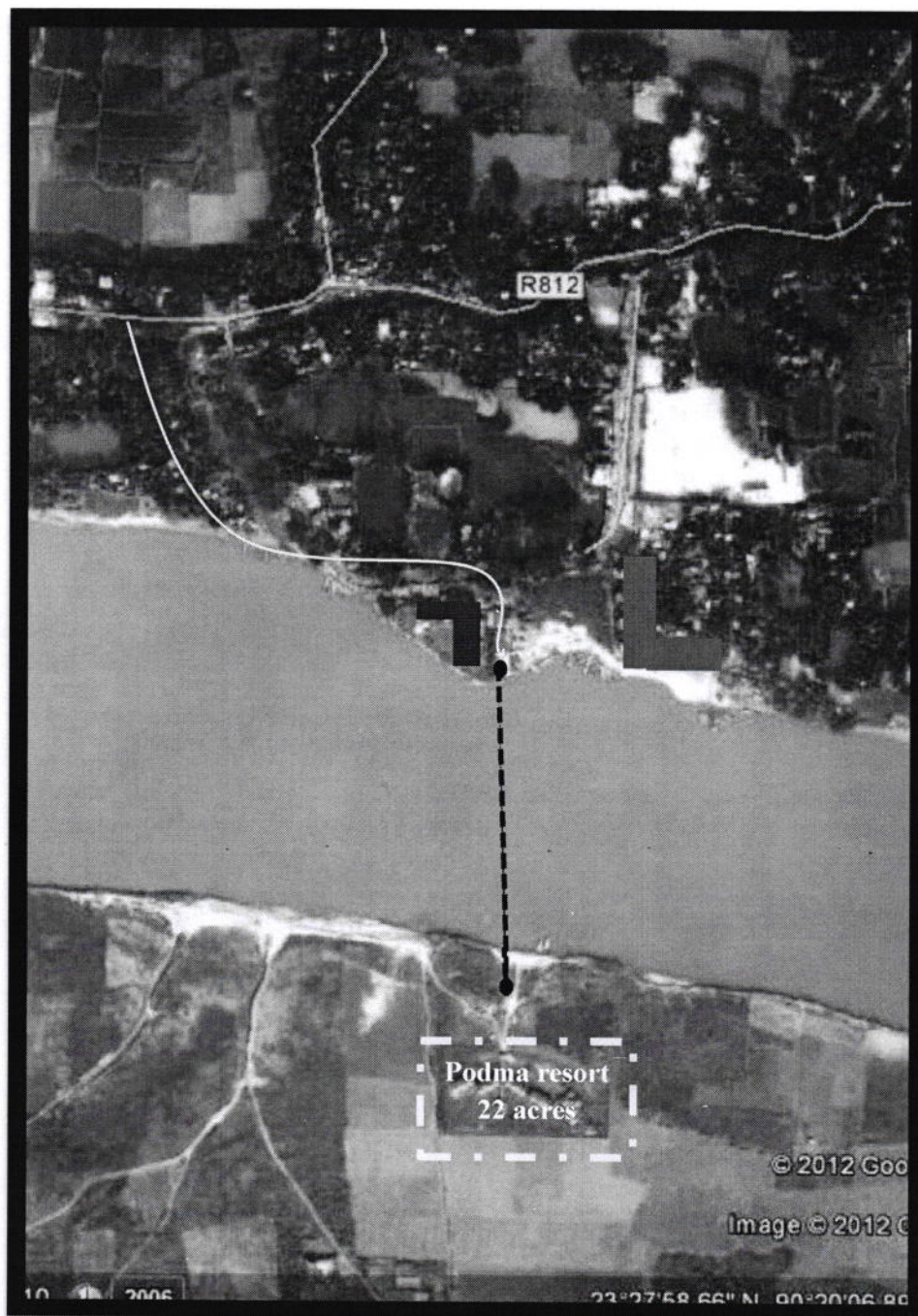


Figure 22: Site surrounding and access to the resort

- River Crossing by Boat
- Lohajong Police Station
- Site of Padma Resort

Site –Building relationship:

There is a mental and physical preparation to access the site which is very much important in any architecture. In Podma resort, people need to park his or her car at Louhajung Police Station which is across the river then need to take a boat ride which takes maximum 3 minutes. After that they need to walk on foot celebrating a wonderful green Kash Ban to the main entry of the Padma Resort. This experience gives a wonderful mental satisfaction to a visitor. As the site is gets flooded during summer, the passage and all the structure has been built above 4 feet from the ground level. This type of method can be seen on that region. The whole structure faces the north-south orientation. The site has been given a boundary with some precast concrete column and wire mesh.

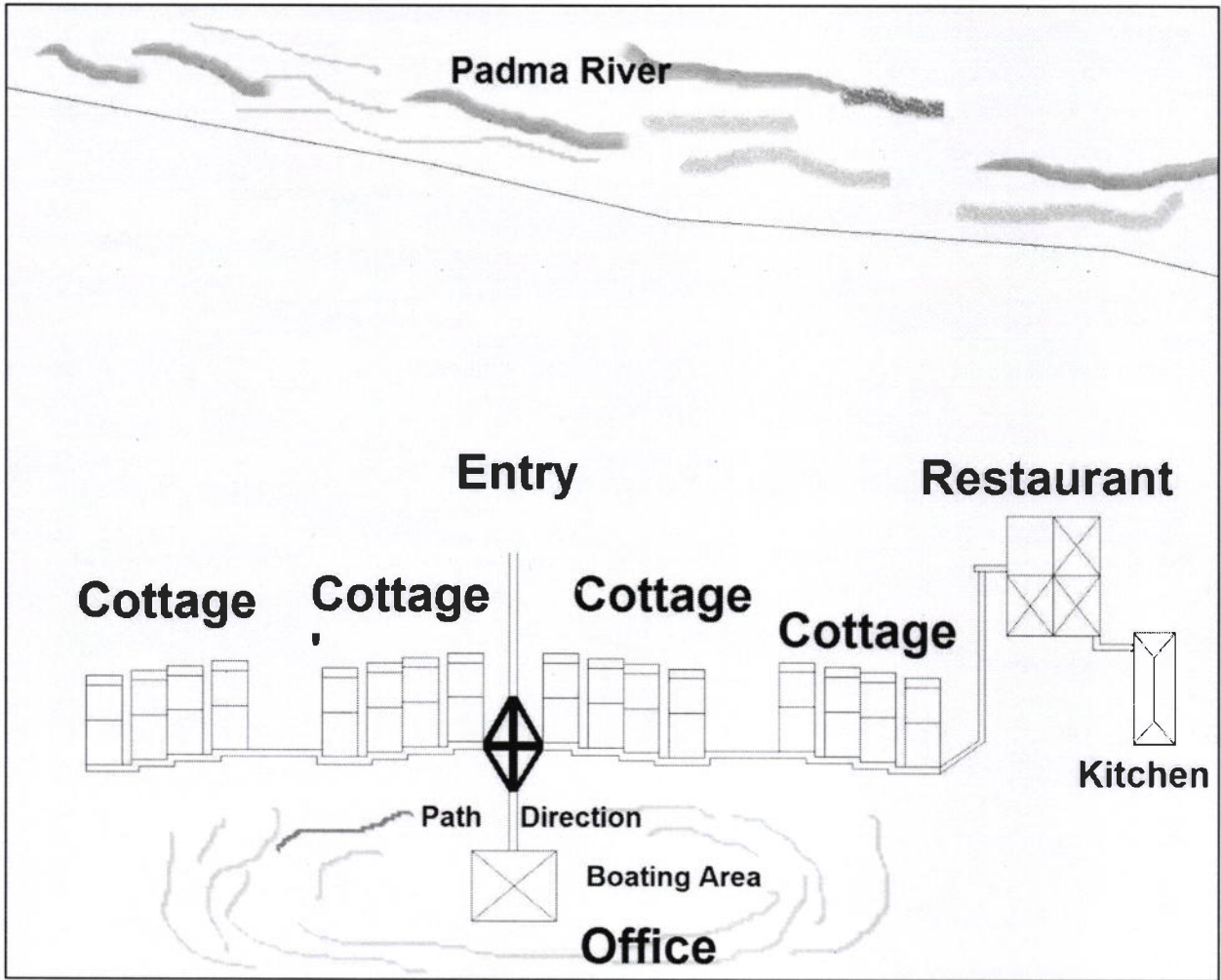


Figure 23: Site Plan of Padma Resort

Functional space relationship:

All the major functions office, cottage and restaurant are spread out horizontally on the site. Only duplex cottage has vertical approach internally. All the major functions are connected with a raised wooden platform. Water activity area is surrounded by the cottage, restaurant and office area. This area can be dividing in three zones-semipublic, private, and semi-private.

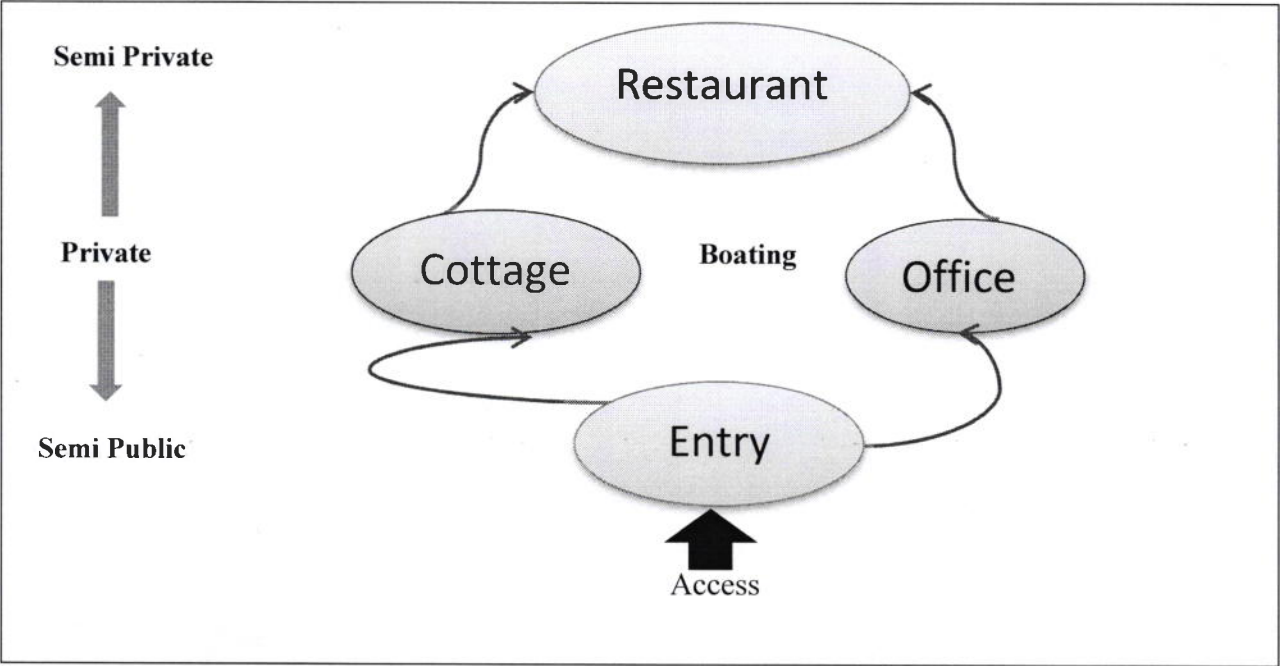


Figure 24: Basic Functional relationship

Padma Resort in winter and summer:

Padma Resort has some specialty from other resort. In winter the river inside the site becomes dry and in summer it's again filled with water. And this natural changing gives the resort two different looks for tourist.

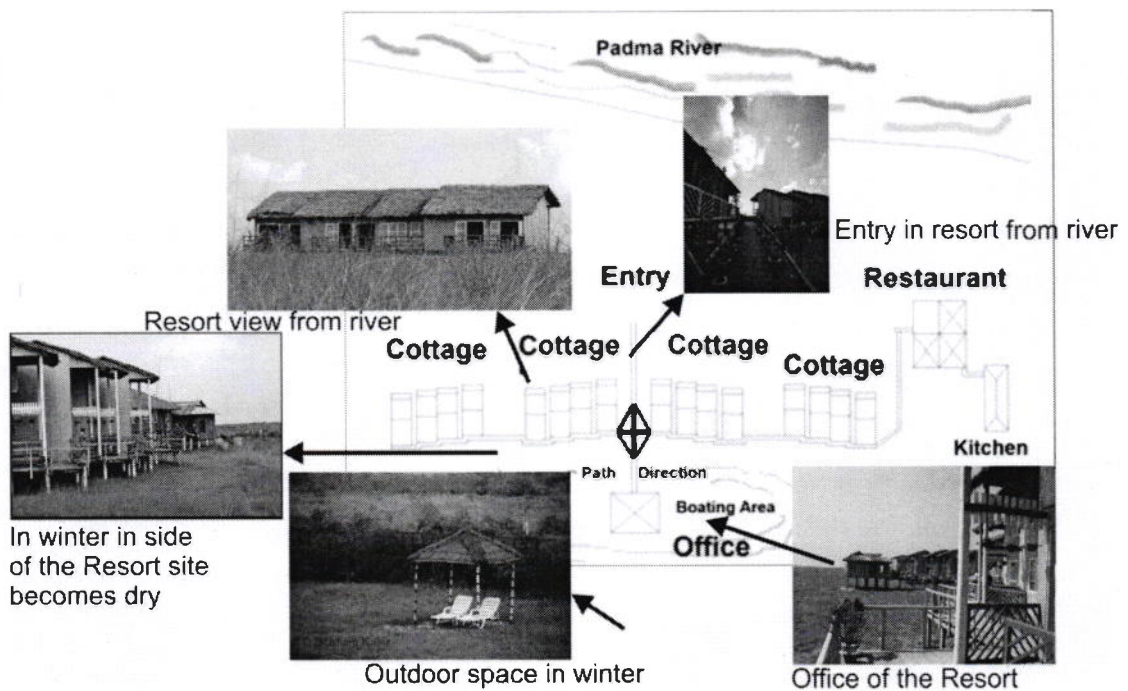


Figure 25: Padma Resort in winter season

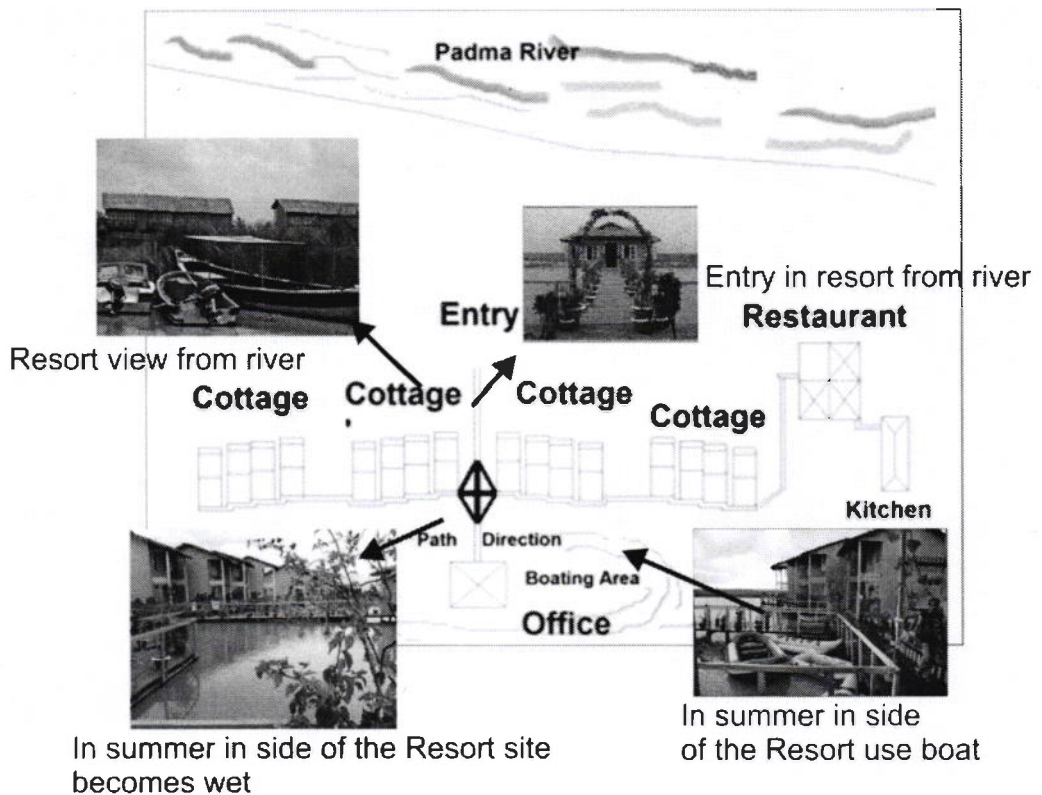


Figure 26: Padma Resort in winter season

Building:

It has sixteen duplex cottages. The cottages are wooden but built in concrete structure. Each cottage has living room, mezzanine floor, two verandas, a tiles-clad washroom, and 2-bed room. It has also a restaurant. Car parking space is abundant at the Louhajung Thana (across the river).

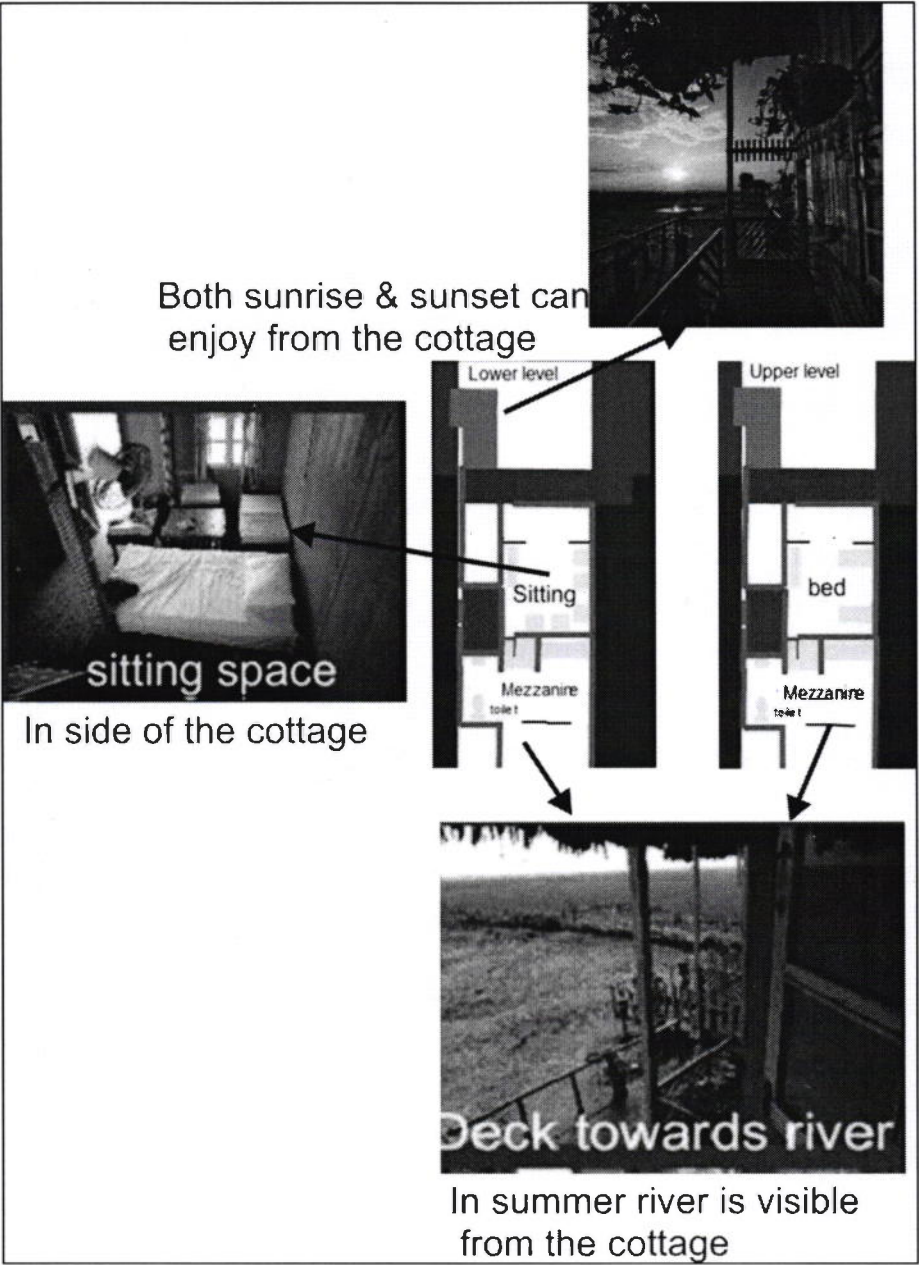


Figure 27: Function of the cottage

Structural System: palm leaf thatch

This type of structural system is abundantly used in this region as the river destroys many used land in every year. This land is remaining flooded in the season summer and rain. As a result people generally use this type of structural method to build their own house. They use precast concrete column which is available in their local market. They use wood as wall and floor. The whole cottage, restaurant, kitchen and office are made of wood. The ceiling is made of bamboo. Roof is filled with palm leaf.

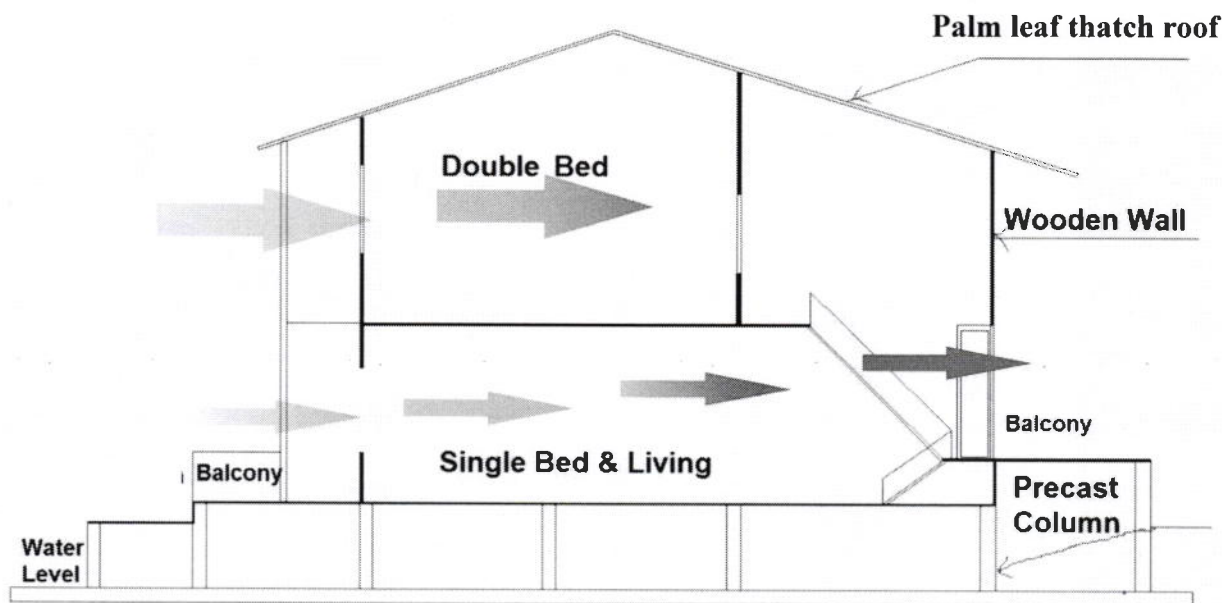


Figure 28: Vertical functional relationship and structural specialties.

Environmental Consideration:

Padma resort has been setup with natural way in natural environment. All the material they have used is local. They use septic tank and soak Pit for their Sewer system. They clean them every day. The electricity that they use, come from generator. The cottage and other building are naturally ventilated. To ensure the comfort they provides ceiling fan in everywhere. The heat that absorbs the structure can leave easily to the air because of double height space and the pitch roof construction.



Figure 29: Palm leaf Restaurant-Bamboo Ceiling and wooden wall

Social Benefits:

This resort has given many jobs to many local people. As a result, their economy goes much better than before. Security has been improved on that area. Police station has been more active now these days. Padma resort gives a solid satisfaction to its visitors with lots of fun. People can have fresh Hilsha fish in here. So people are enjoying a lot. Day by day it becomes more popular to the people because it's near to Dhaka city. So it's serving the society a lot as well as the country.

Positive:

- Innovatively handles the design using indigenous material.
- Different Structural method has been successfully used on river bed.
- Natural light and ventilation has been successfully used in Padma Resort.
- Roofing techniques are very interesting.
- It reflects the regional architectural style.

Negative:

- Arrangement of the cottages is monotonous.
- Seasonal climatic change has not been considered properly in the design of the resort.
- Security and privacy of the guests are not maintained.
- No landscaping has been created in the open space of the resort.
- There is no dynamism in the overall design of the resort.

3.4 Jean-Michel Cousteau Fiji Islands Resort:

Jean-Michel Cousteau Fiji Islands Resort is located on Vanua Levu, Fiji's second largest island. This Fiji accommodation is accessed by Savusavu airport, 1 hour domestic flight from Nadi Airport. Guests are met by Jean-Michel Cousteau Fiji Islands Resort and transferred by land to Savusavu Bay where this luxury Fiji resort is set amongst a coconut plantation over 17 acres of lush tropical landscape. This ecofriendly Fiji resort offers amazing views out onto the Pacific Ocean, the waters are peaceful and perfect for families to go snorkeling, diving, kayaking and swimming.



Figure 30: The view of Jean-Michel Cousteau Fiji Islands Resort

Objective of Jean-Michel Cousteau Fiji Islands Resort:

Architect Jean-Michel Cousteau and his team wanted to prove that environmental responsibility and financial success were simultaneously feasible, demonstrating that the “eco” in ecology and economics were theoretically and practically compatible. The Jean-Michel Cousteau influence affected energy conservation, waste management, water conservation, landscape management, natural reserves, coastal restoration, food production, integrated pest management, interpretation for guests, and community outreach. In order to he influence on ecotourism.

Location:

Surrounded by some of the world’s most outstanding coral reefs, the resort is located on the peaceful shores of the Koro Seas Savusavu Bay, four miles (7 kilometres) from Savusavu town on Vanua Levu. The island, the second largest in Fiji, offers spectacular secluded coastline, pristine barrier reefs, tropical rainforests, exotic waterfalls, and traditional villages and towns yet to be discovered by most travelers.

The Fijian people are multi-religious, multi-cultural and English-speaking. They are recognized as some of the friendliest people on earth. Fiji is accessible from most of the world by international carriers into Nadi International Airport.

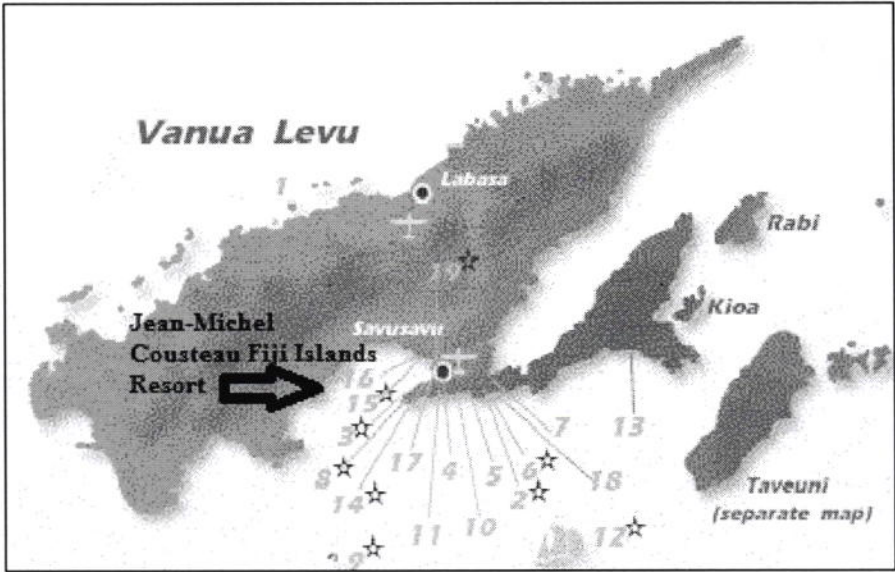


Figure 31: Location Map

Site selection and landscaping:

The underpinning was to keep additional development to a minimum and make better use what already exists. The JMC resort has taken advantages of an existing facility and revitalized it to meet new standards. The retrofitting process took the form of recycling, reuse and upgrading of a prime site resort constructed on theme of a traditional Fijin village. The local habits have also been restored in the process. The village theme was considered critical to the design ethic as it dignified the cultural heritage and utilized design feature refined by generations to meet unique Fijian geography and climate. The total site area is around 17 acres.

Major Function:

- Accommodation
- Restararant
- Recreational Facilities
- Swimming Pool
- Sauna & health club

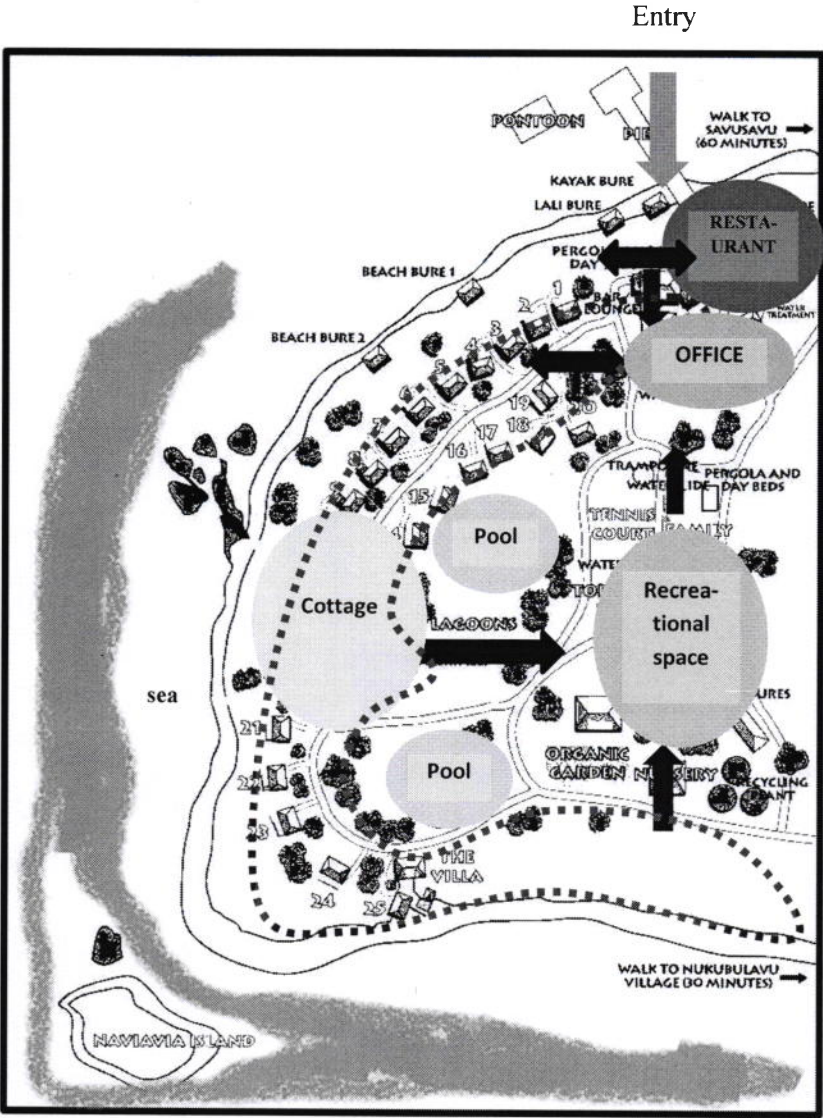


Figure 32: Functional zoning on site

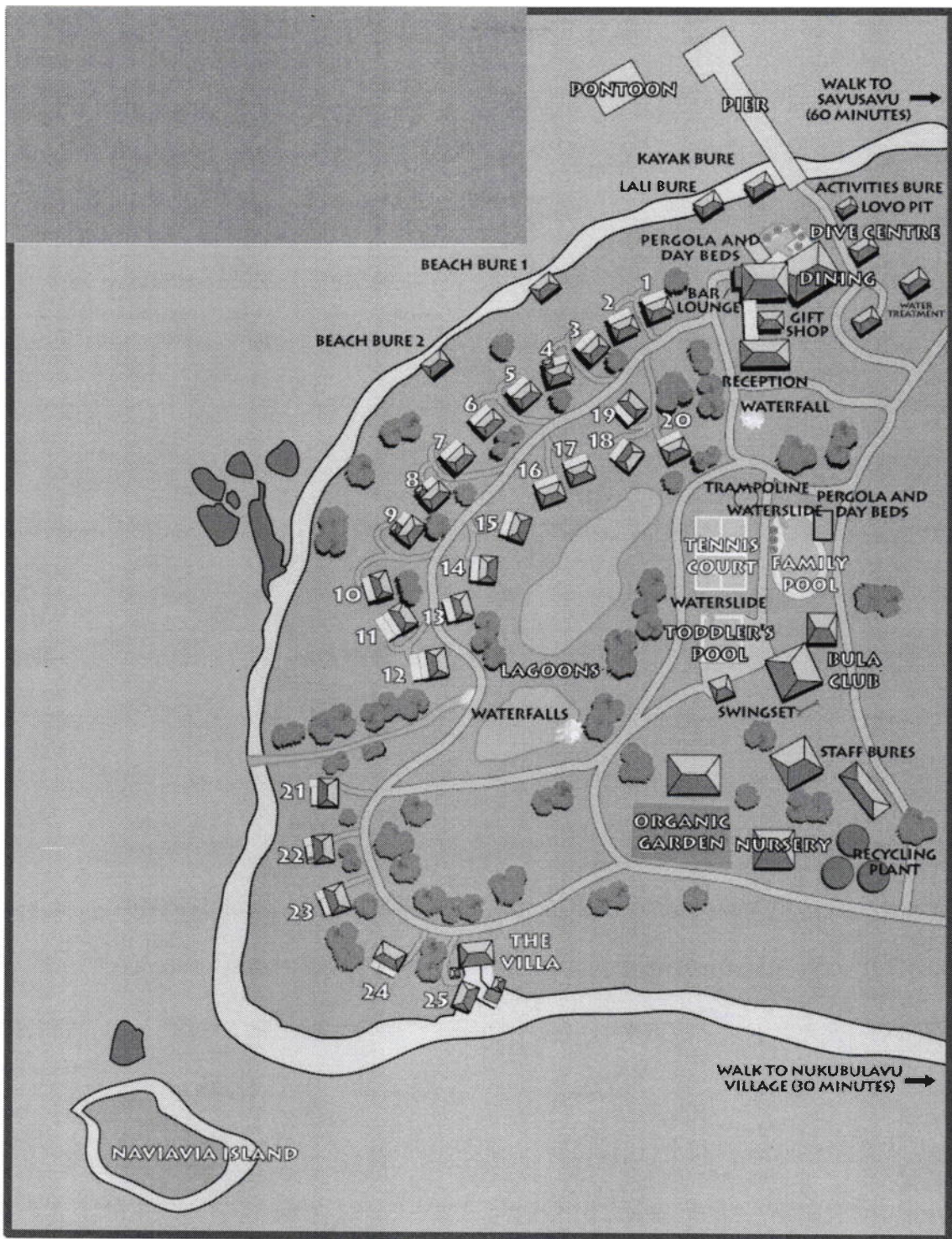


Figure 33: Functional set up on site

Accommodation:

Built on the site of a former coconut plantation, the 17 acre resort features 25 spacious, individual cottages, Fijis traditional thatched roof bungalows. Guests may choose from Villa, Honeymoon Point Reef with Spa Tub, Point Reef, Oceanfront Suite, and Oceanfront 2-Bedroom, Oceanfront, or Garden view accommodations. Built of local non-endangered timber, the cottages provide privacy and comfort. All have high temple ceilings, native timber floors, expansive decks and a thatched roof. The cottages are elevated and have wooden louvered floor to ceiling screened windows to take advantage of sea breezes. Easily accessible to the main resort facilities, the cottages are comfortably spaced apart with dense vegetation between them to ensure privacy.

Each cottage features rattan furnishings, king-size bed with custom-made mattress, premium quality linen, and small sitting area with desk, single daybed, overhead fans, standing fan, and private deck with garden or ocean views.

Fiji Private Villa:

Walking past the resort's picturesque lagoons, Villa guests approach from a curving stone pathway landscaped with tropical foliage and flowers. Entering the solid vesi doors, the Daybed Cottage, Horizon Edge Pool and al fresco dining area come into view.

To the left, the Villa's Master Suite features a luxurious bathroom with a generous spa tub with whirlpool, a two-person indoor shower, chaise lounge, and two vanities with Aqua glass vanity bowls, copper Bisazza tiles and beveled gilt mirrors. Stone pillars are lit with custom-made copper 'torchlights.' A Savusavu builder created the cabinetry.

The Villa's Master Suite's doors open fully to a view over the upper deck, including two sunlounges and side table. Here the Daybed Pergola, three steps up from the lower deck, overlooks the Horizon Edge Pool - 15 feet wide and four feet deep - and the ocean and reefs beyond.

To the right of entry is a spacious, relaxed living area (or second bedroom). It features comfortable lounge seating and convenient kitchenette amenities, including a stovetop, sink and refrigerator stocked with complimentary beverages and snacks. A separate bathroom offers an additional shower and lavatory. This area's doors open onto the alfresco dining deck and pool,

while its picture window showcases the Island beyond. Just past the pool is another outdoor shower and steps leading to the Villa's private stone patio and the beachfront.

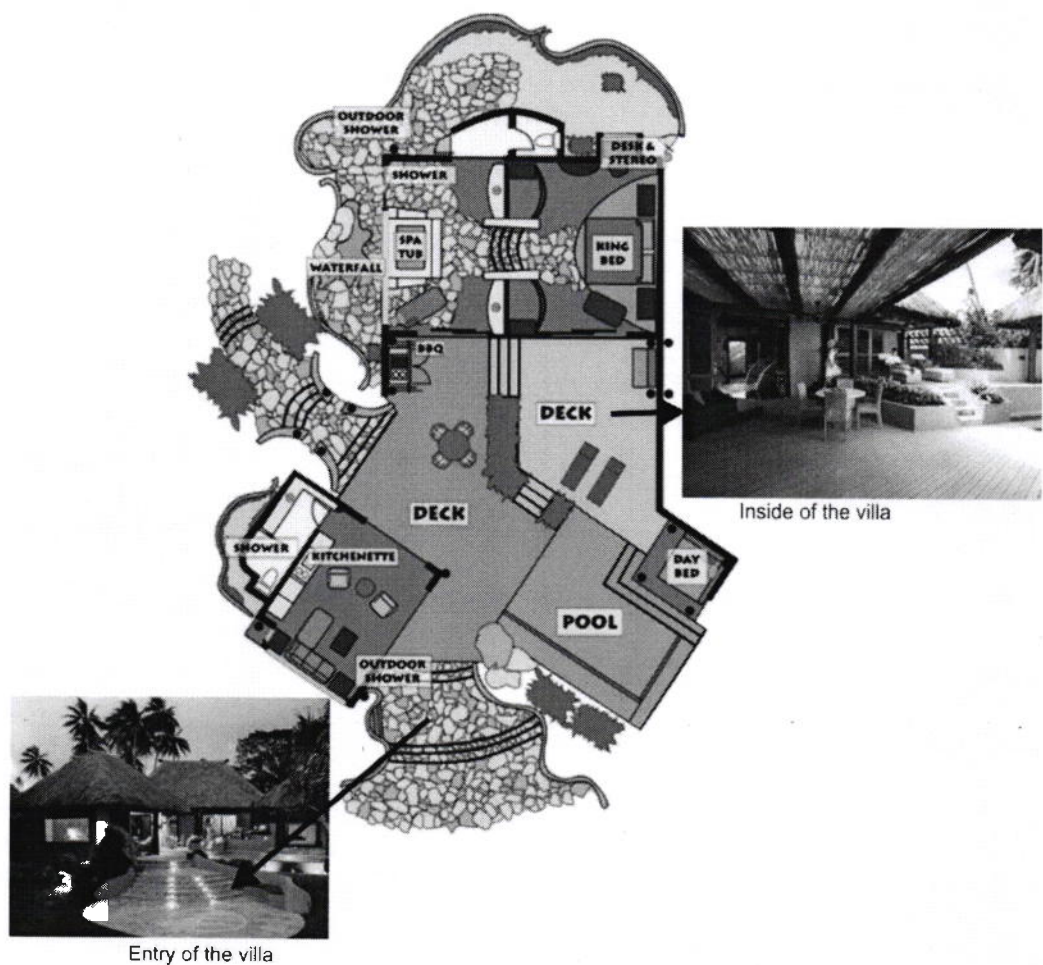


Figure 34: Fictional space of Fiji Private Villa

Oceanfront Suite Cottage:

Accommodations designed for honeymoon couples or a family of four or five, each oceanfront suite cottage offers privacy and splendid views. The cottage is approximately 540 square feet with a single deck and a large stone mosaic patio, these cottages have one king bed & one single day bed in the main area and one king bed in a separate, smaller room.

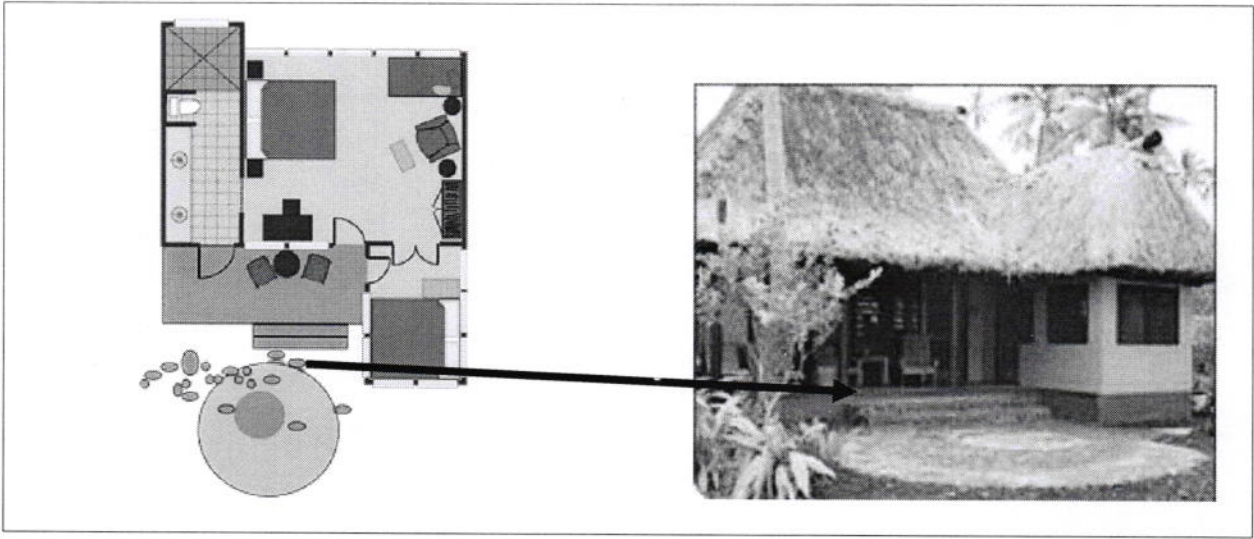


Figure 35: Fictional space of Oceanfront Suite Cottage

Oceanfront Cottages:

Oceanfront cottages are about 440 square feet with a 225 square feet deck including a hammock. Offering privacy and water views, this cottage provides one king bed and one day bed. It is a perfect accommodation for a couple with up to 2 children 12 years and under (rollaway bed for 2nd child).

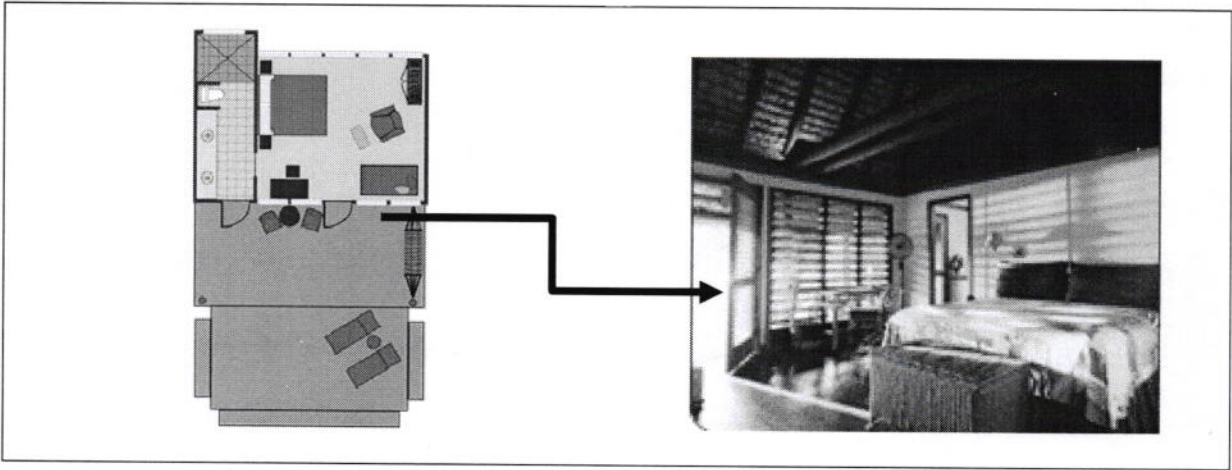


Figure 33: Fictional space of Oceanfront Cottage and Sea view can see from this cottage

Garden view Cottages

Garden view cottages overlook tropical foliage, colorful flowers and exotic plants. Each cottage is about 440 square feet with a 225 square feet deck, with a king bed and a day bed. It can be an ideal accommodation for a couple with up to 2 children 12 years and under (rollaway bed for 2nd child).

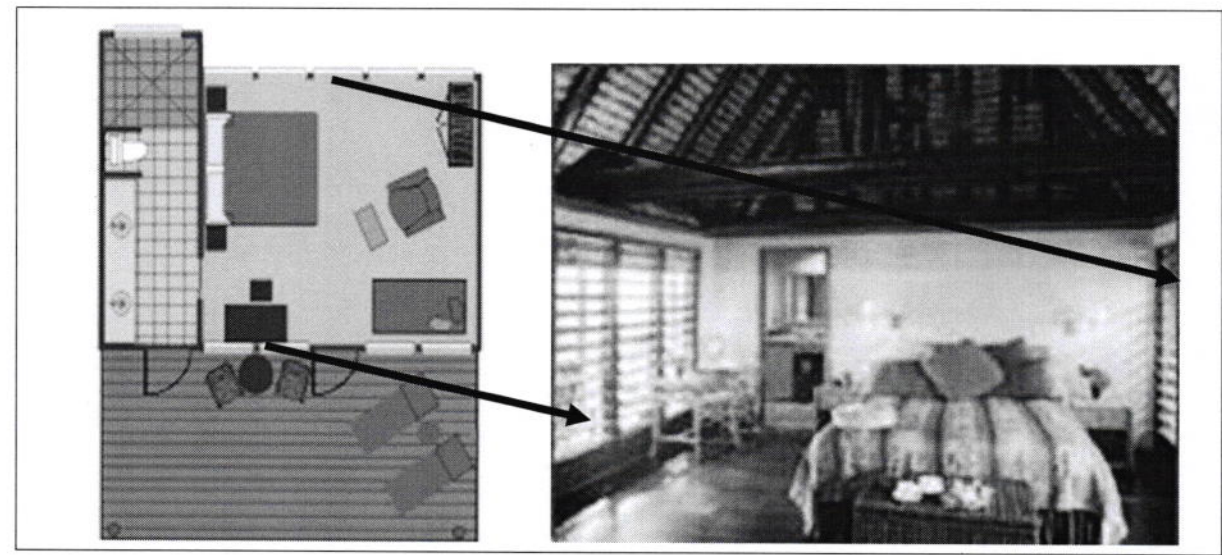


Figure 34: From both side of the cottage get sea and garden view and light

Point Reef cottages:

Set apart from the resort in a secluded area but with easy access to all we offer, these private split level cottages are very spacious - ideal accommodations for honeymoon couples and romantic getaways. Each cottage features about 750 square feet plus a balcony & 200 square foot deck . They have one king bed on the upper level and two separate day beds on the lower level or sitting area. All offer spectacular ocean views from the living room and bedroom. Children are welcome only during school holidays, including summer vacation.

Activities

An unsurpassed range of complimentary activities includes:

Recreation: Four swimming pools, catamaran sailing, kayaking, snorkeling, swimming, kayaking to Private Island, tennis, volleyball, table tennis.

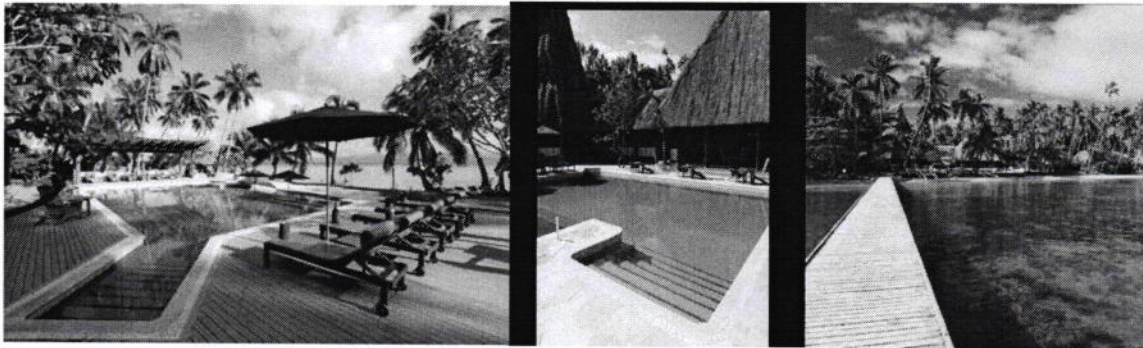


Figure 35: Recreational space

Ecology (Led by the resort's own on-site Marine Biologist): Guided snorkeling trips, nature hikes, reef flat walk, mangrove tour, Reef Critters & Coral City slide shows, glass-bottom boat excursions, edible landscape tour, clam farm excursion, traditional Fijian medicine walk, stargazing, night snorkeling.

Fee-based activities include: Scuba diving and scuba equipment, spa and massage treatments, deep-sea fishing, sunset cruise, private island escape with gourmet picnic, dine-outs, guided kayak trips to the interior of Vanua Levu.

Construction material:

Principal materials used in the development include timbers, palm leaf thatch, ceramic, tiles, stone, and concrete.

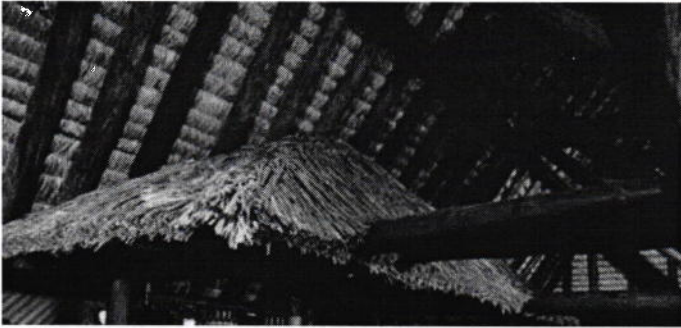


Figure 36: Material of roof structure

Positive:

- The resort is designed to support and be supported by the local community.
- The designers took a pragmatic approach to development and environmental protection.
- A multiple dimension of resorts has been organized in a sound way.
- Deluxe facilities blended in an natural surrounding can easily attract the tourists.
- The theme of the local Fijian's village has been effectively combined in the design of the resort.
- Climatic changes are considered properly in the design.
- Roofing techniques are very interesting.

Negative:

- Some cottages of the resort are deprived from the natural view.
- The resort neither stained as a luxurious nor an eco-resort. Rather it is stuck in the middle.

3.5 Conclusion of Case Study

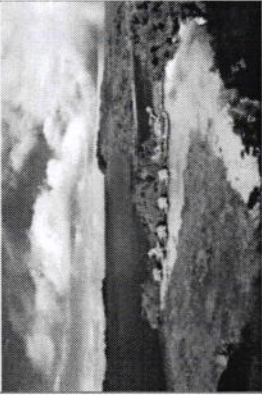
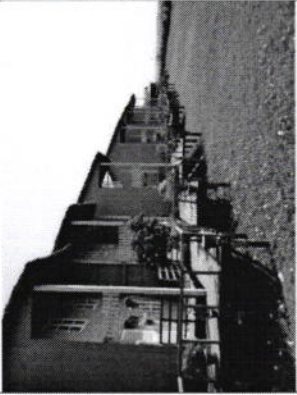
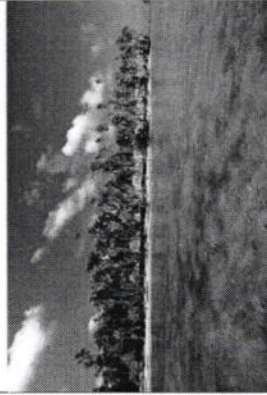
Project	Project Name	Objective	Findings
	Misool Eco Resort Architect: Viv Faithfull from WH Architecture Location: Raja Ampat, Indonesia	<ul style="list-style-type: none">- Comprehending Eco tourism from the international context.- Understanding the scale and scope of project.- Individual cottage and their clustered setup.- To find out the sight-building relationship.- Functional arrangement of resort and their relationship.	<ul style="list-style-type: none">- Authority of Misool Eco Resort has introduced ECO system to the public.- Sea view is properly clear from every cottage.- Functional relationship of space is pleasant and very close to nature.- Concept of nature is totally clear to the design.- Blended the nature with luxury in a sustainable way.
	Padma Resort Local: Lohajong, Munshigonj	<ul style="list-style-type: none">- To understand the context and spirit of the place through local, traditional architecture.- Find out different method of structural solution and traditional forms.- Find out, how they incorporated the design with the river side environment.- Tectoni and tactile quality that response with human psychology.- To understand the informal arrangement of resort cottage.	<ul style="list-style-type: none">- Innovatively handles the design using indigenous material.- Differently structural method has been successfully used on river bed.- Natural light and ventilation has been successfully used in Padma Resort.- Roofing techniques are very interesting.- It reflects the regional architectural story.
	Jean-Michel Cousteau Fiji Islands Resort Architect: Richard C Murphy Location: Vanua Levu, Fiji	<ul style="list-style-type: none">- To understand how eco tourism can be facilitated with luxurious facilities.- How can architecture goes blended with nature.- How to treat the long beach frontage with nature.- How to cluster the room in an innovative way.- To identify the reasons behind the property.	<ul style="list-style-type: none">- A multiple dimension of resort has been organized in a sound way.- Roofing techniques are very interesting.- Deluxe facilities blended a natural surrounding can easily attract the tourist.

Figure 37: Project Objective and findings

Chapter 4: Site Analysis & Program Analysis

4.1 Location:

The site is located at a distance of 254km from Dhaka. Site is located at end point of Khulna-Mongla highway road. It's located at the opposite side of the Passur Hotel.

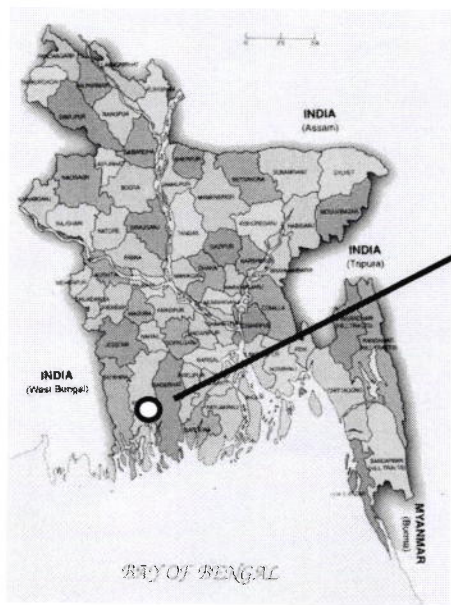


Figure 38: Map of Bangladesh

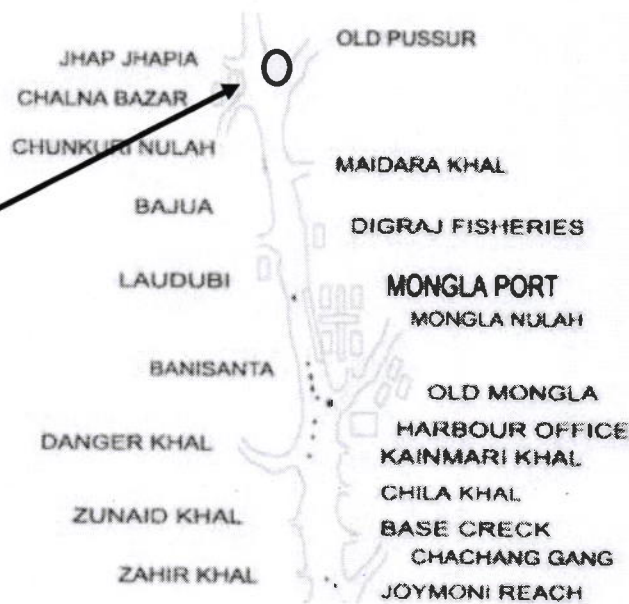


Figure 39: Existing Site Map of Mongla

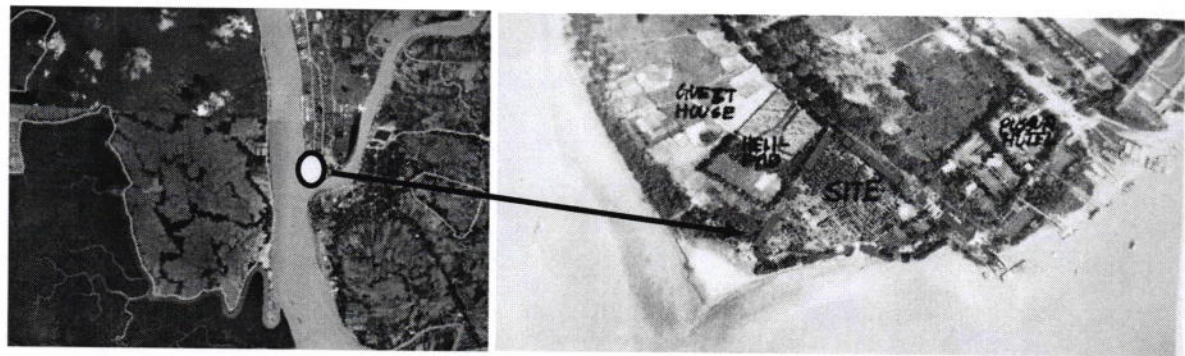


Figure 40: Location of the site

4.2 Way to the site analysis of Mongla:

Mongla is a sub urban area. People are depended on agriculture and fishing.

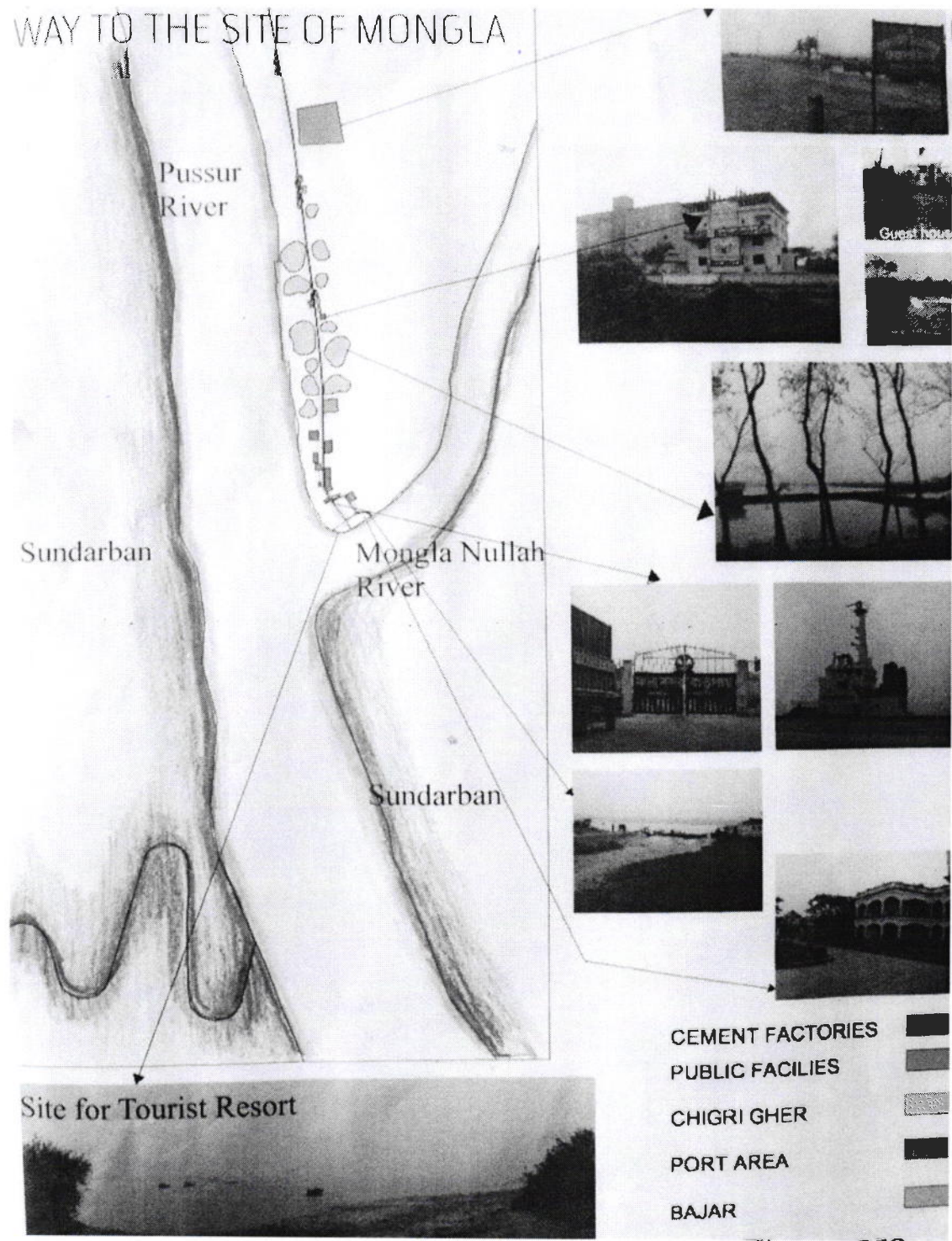


Figure 41: Way to the site at Mongla

4.3 Site Description:

4.3.1 Existing surrounding and climate context:

My site is located in a prime location. Mongla port, Passur River, Mongla Nulla River, jinjira point, coast guard office, helipad, bus stand etc. are located very close to my site. Sundarban is very easily accessible from my site. In south there is Mongla River, so there is proper ventilation in the site. East side of the site has the main road and road is filled with tall trees which creates a natural shading for my site. The total area of the site is about 13 acres.

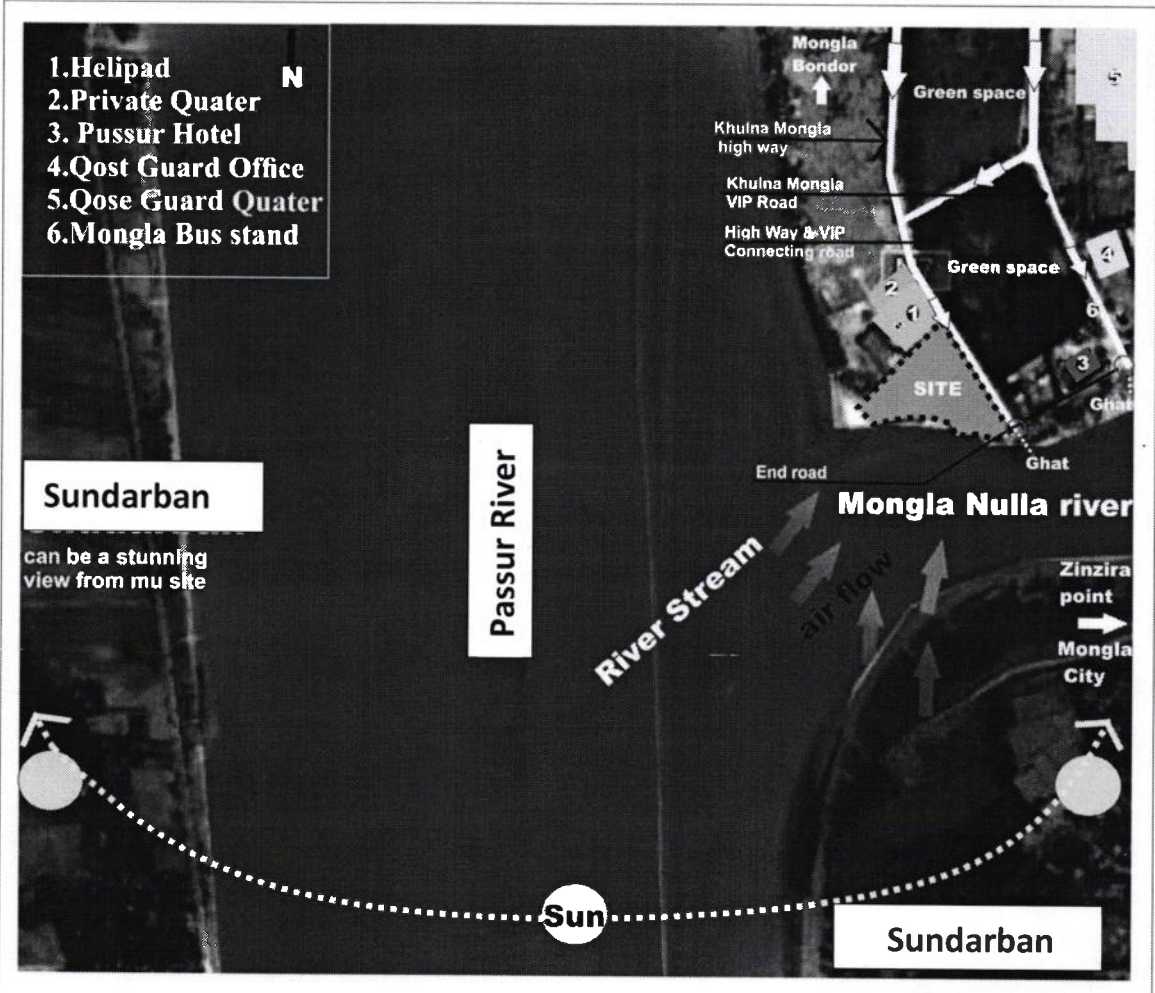


Figure 42: Surrounding of the site

4.3.2 Site surrounding analysis:

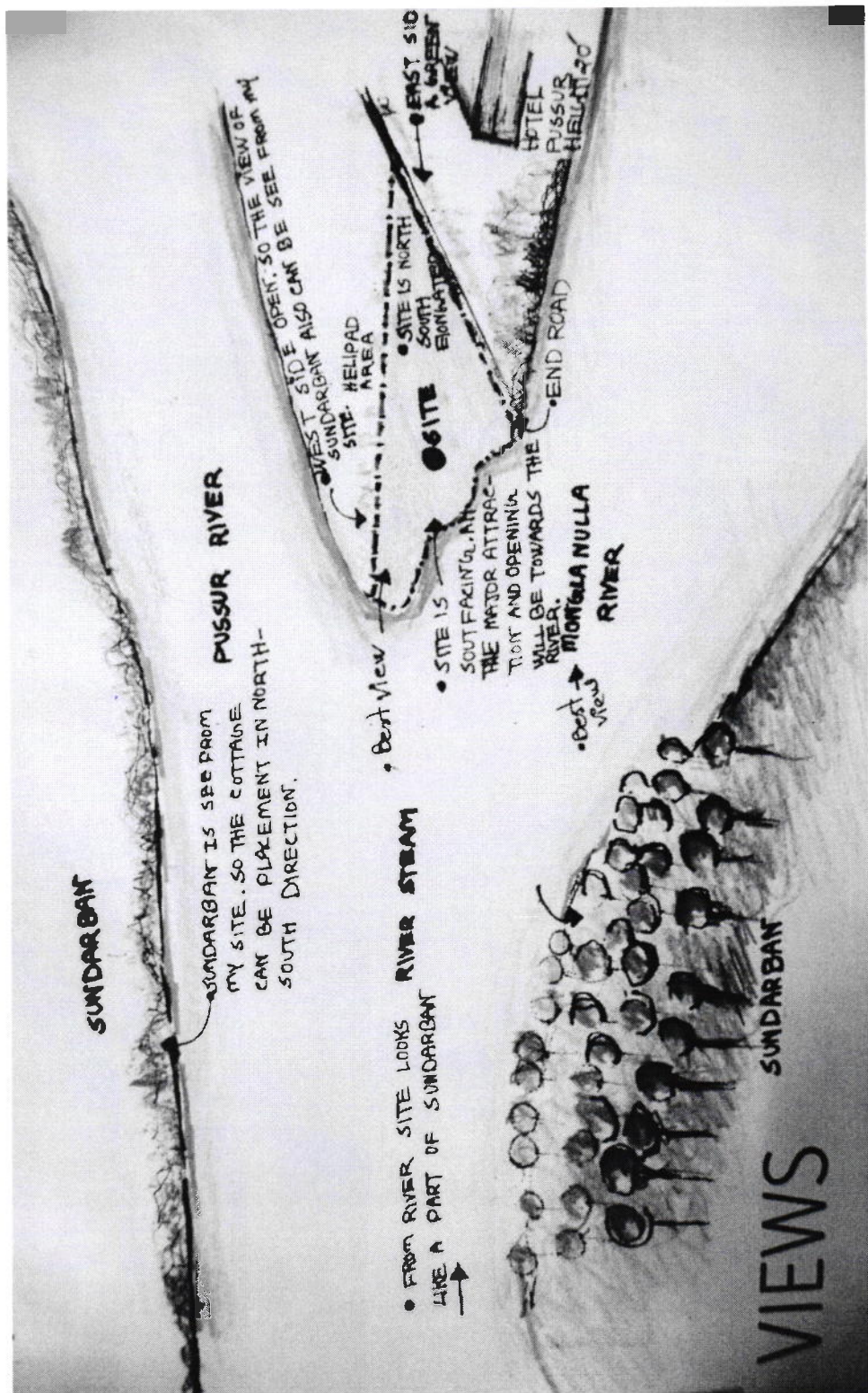


Figure 43: Surrounding of the site

4.3.3 Topography:

There is an existence of two major levels in the site. Among them one level is dry which is equivalent with the road side. This level is filled with a large number of tress. Another level is located near the river which is around 2 feet lower. This level remains wet in most part of the year and goes under water in the rainy season. Although there is no large trees in this level but there is a small bush along the river.

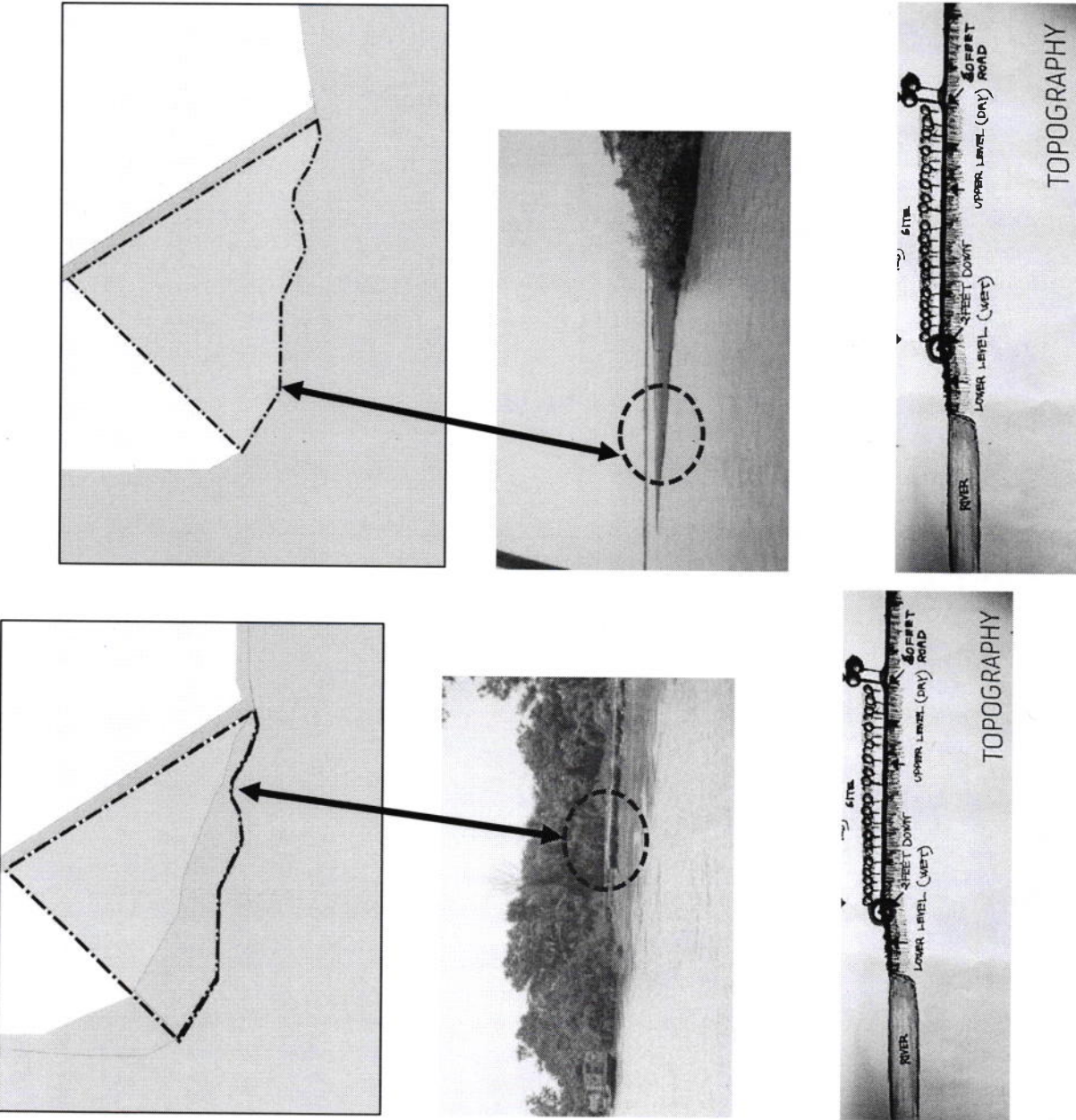


Figure 44: The diagram shows how water enters the site at rainy season

4.3.4 Vegetation:

At present approximately 80% surface of the site has been filled with vegetation. A large number of coconut trees has been planted in a clustered way inside the site around 3 to 4 years ago in order to create natural shading for the proposed resort. The average height of these coconut trees are around 12 to 15 feet. These coconut trees naturally create an outlook of a large coconut garden.

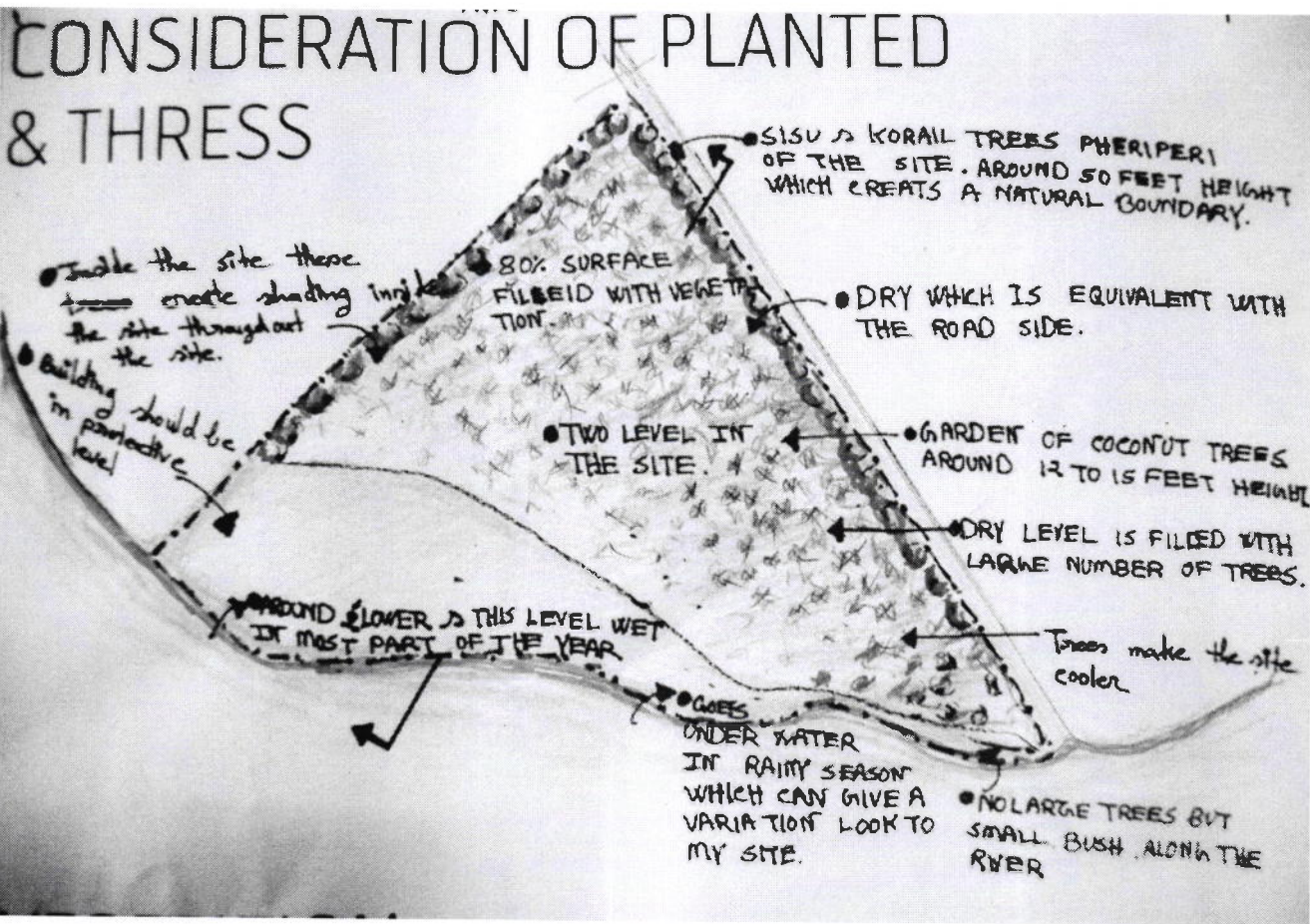


Figure 45: Vegetation in the site

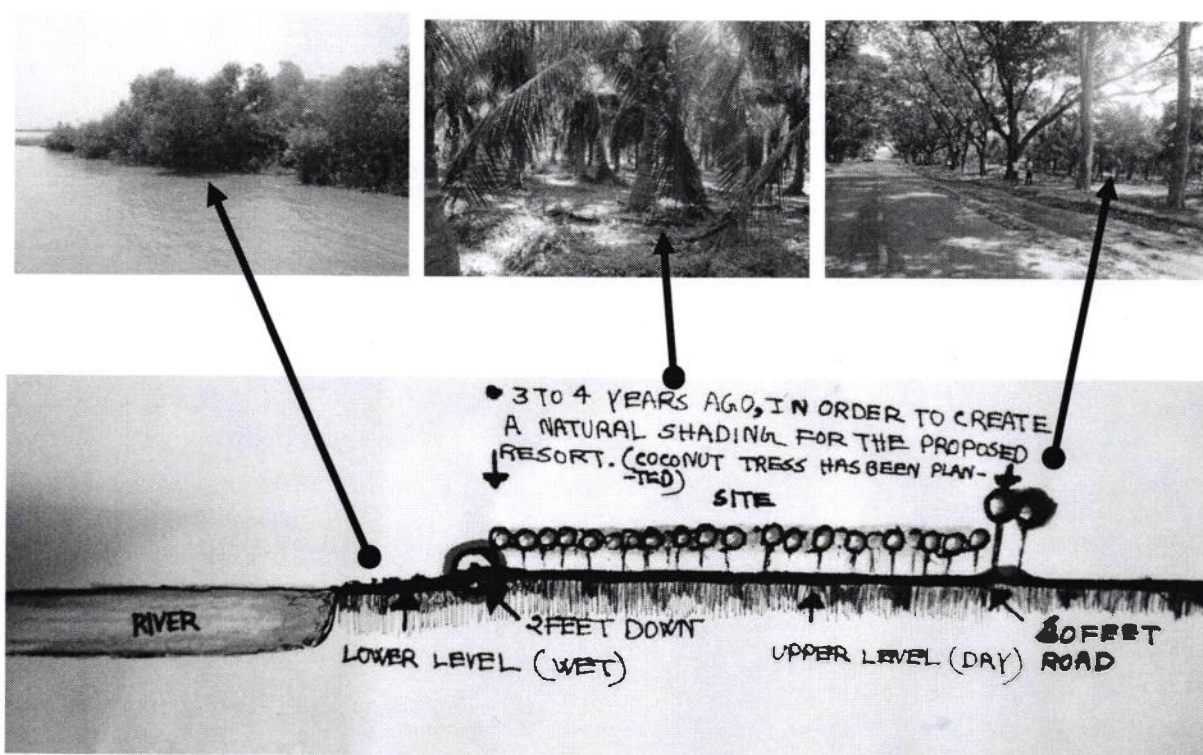


Figure 45: Vegetation in the site

Apart from these coconut trees there are some Sisu & Korail trees which has been planted long time ago along the road side. The average height of these Sisu & Korail trees is around 50 feet. There are also some trees inside the site which has grown naturally. These trees create shading inside the site throughout the day. Moreover, there is a large bush along the riverside. Since the site is filled with trees the place seems like a part of the Sundarbans when it is viewed from the river.

4.3.5 Consideration of planted and natural tress:

A large number of trees which have been planted or grown naturally across the site are an important part of the place which needs to be considered during the architectural design. To illustrate, the coconut trees standing in the site which are of equal size makes the place cooler using the breeze coming from the south side of the site where the river located. There are a large number of tall trees standing in the north-east side of the site where the main highway road located. As the only main road near the site located in the north-east side, I am considering this

side as the entry point of the proposed resort which will remain shaded. Because of those large trees this side remains naturally shaded all over the year. The trees standing in the north-west side of the site creating a natural boundary for the site. After analyzing all those facts it can be said all those trees standing in this site are an integral part of design consideration.

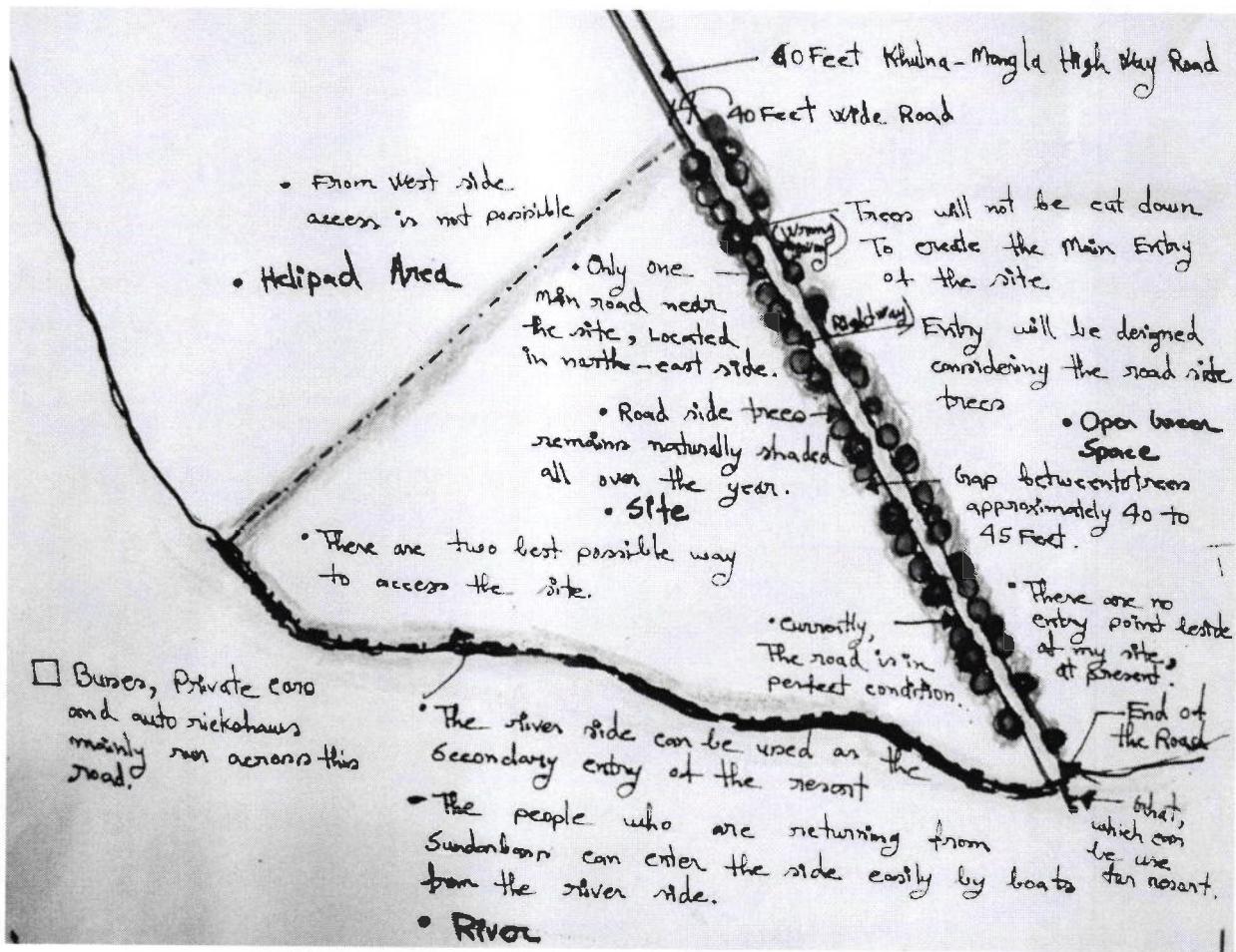


Figure 46: Consideration of planted and natural tress

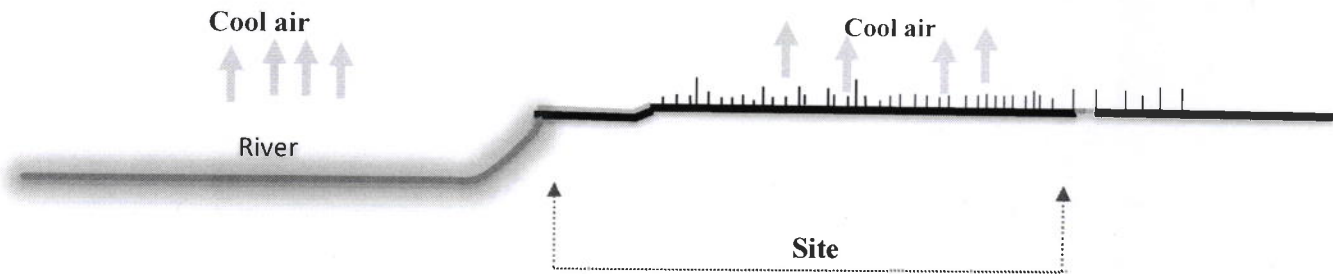


Figure 47: Maximum trees make the site cooler

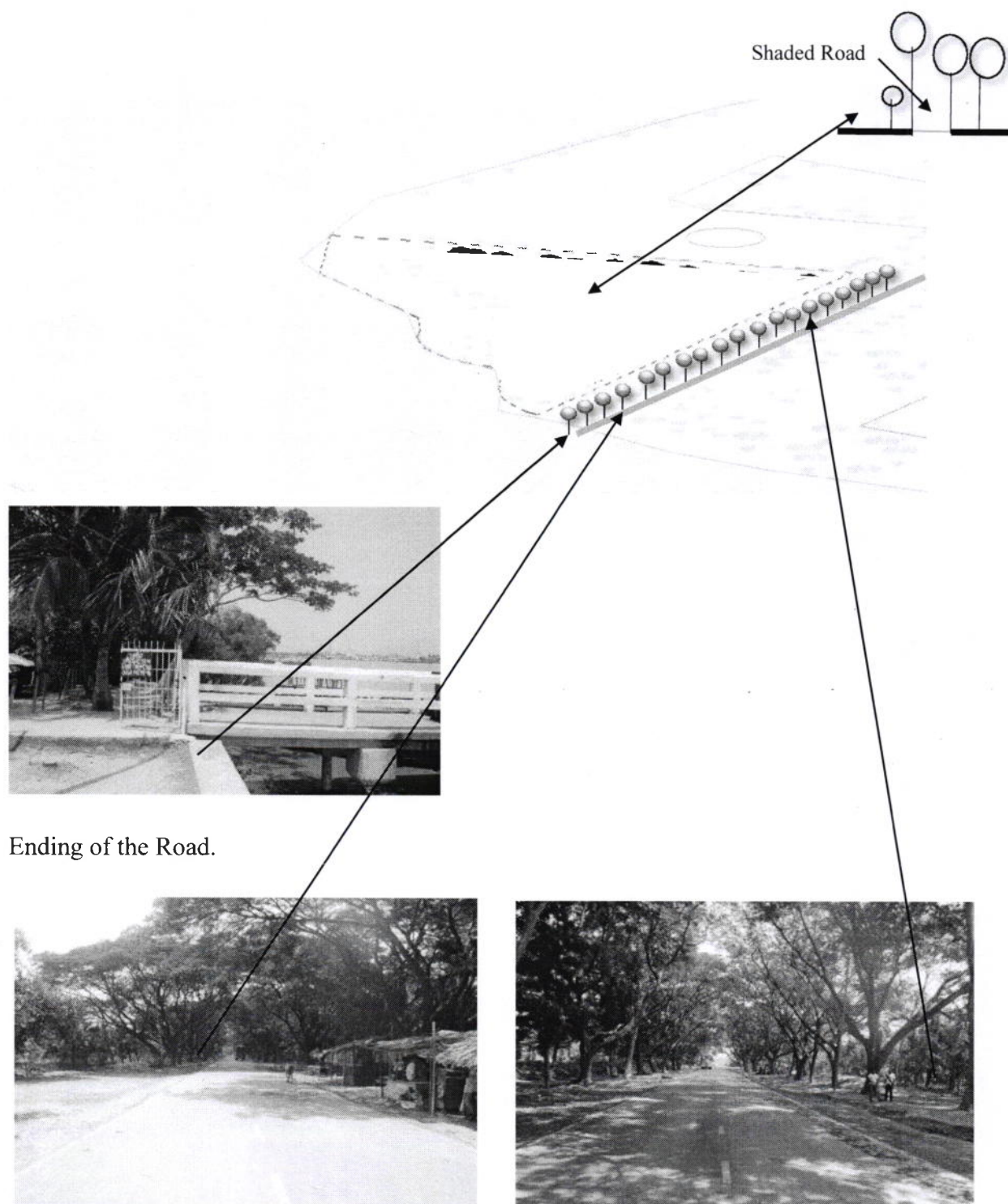


Figure 48: Existing large trees give the Road shaded (North East)

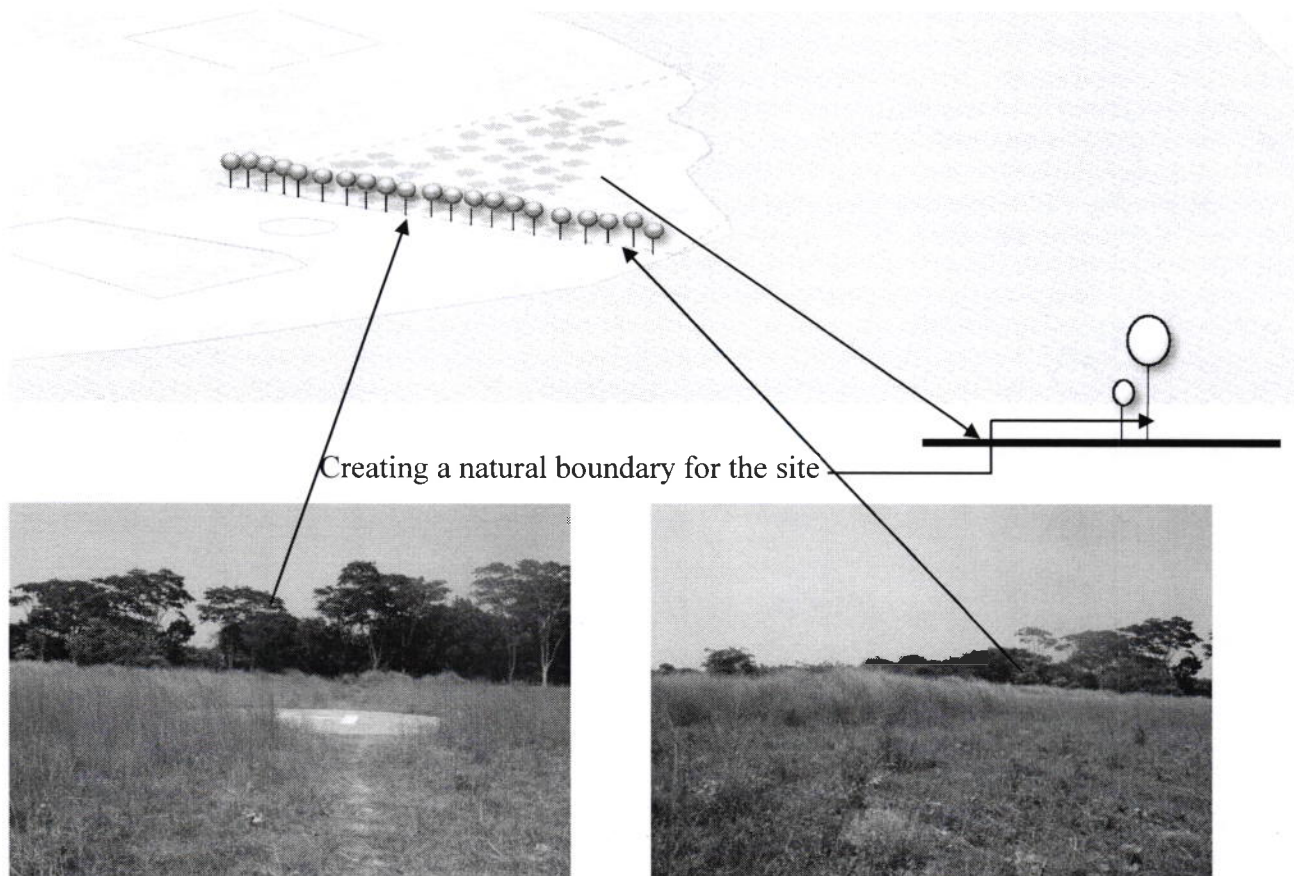


Figure 49: A natural boundary and shade form other side (North West)

4.3.6 Accessibility:

The site can be accessed in two ways: by the roadside and from the riverside. I am considering roadside as the main entry of the proposed resort because this is the only highway road along this site which is 25 feet wide. This road is parallel to the site which ends near the site. This road can be used by the tourists visiting the Sundarbans from Khulna and other parts of the country. Buses, private cars and autorickshaws mainly run across this road and there is a bus stand which is around 1 km away from the site. The riverside can be used as the secondary entry of the resort. The people who are returning from the Sundarbans can enter the site by boats from the riverside. These are the two possible ways to access the site.

4.3.7 Buildings in the vicinity:

The river is located on the south side of the site and there are no other buildings around 300 feet of the site in other three directions. The west side of the site is completely open where the helipad is located. In the east side of the site the Khulna-Mongla highway is located and there are greeneries on the other side of the road. There is a cost-guard office, a government residency and the Pussur hotel far away from the site. There is a low density of population and building across my site. There is a Mongla-Nulla Ghat and a bus stand near the coast guard office where people come regularly from Mongla town but it doesn't affect my site in any negative way. There are no such big structural buildings near the site. Most of the lands around the site have been used for greeneries. As a result the outside environment unites with the site in a pleasant way.

4.13 Infrastructure:

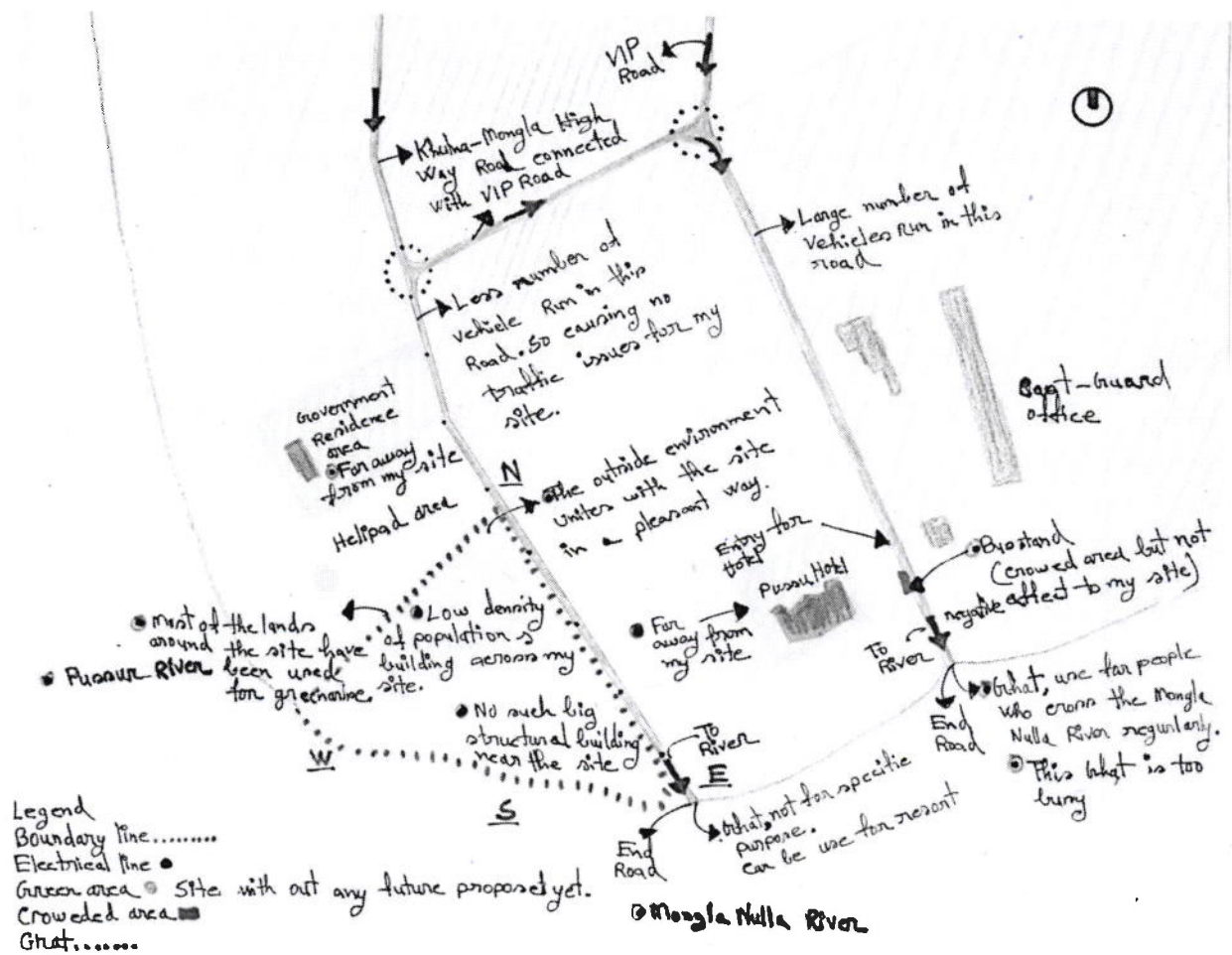


Figure 50: Building vicinity and infrastructure

4.3.8 River breeze and land breeze factor:

Due to day's river breeze and night's breeze is effecting the ventilation of my site.

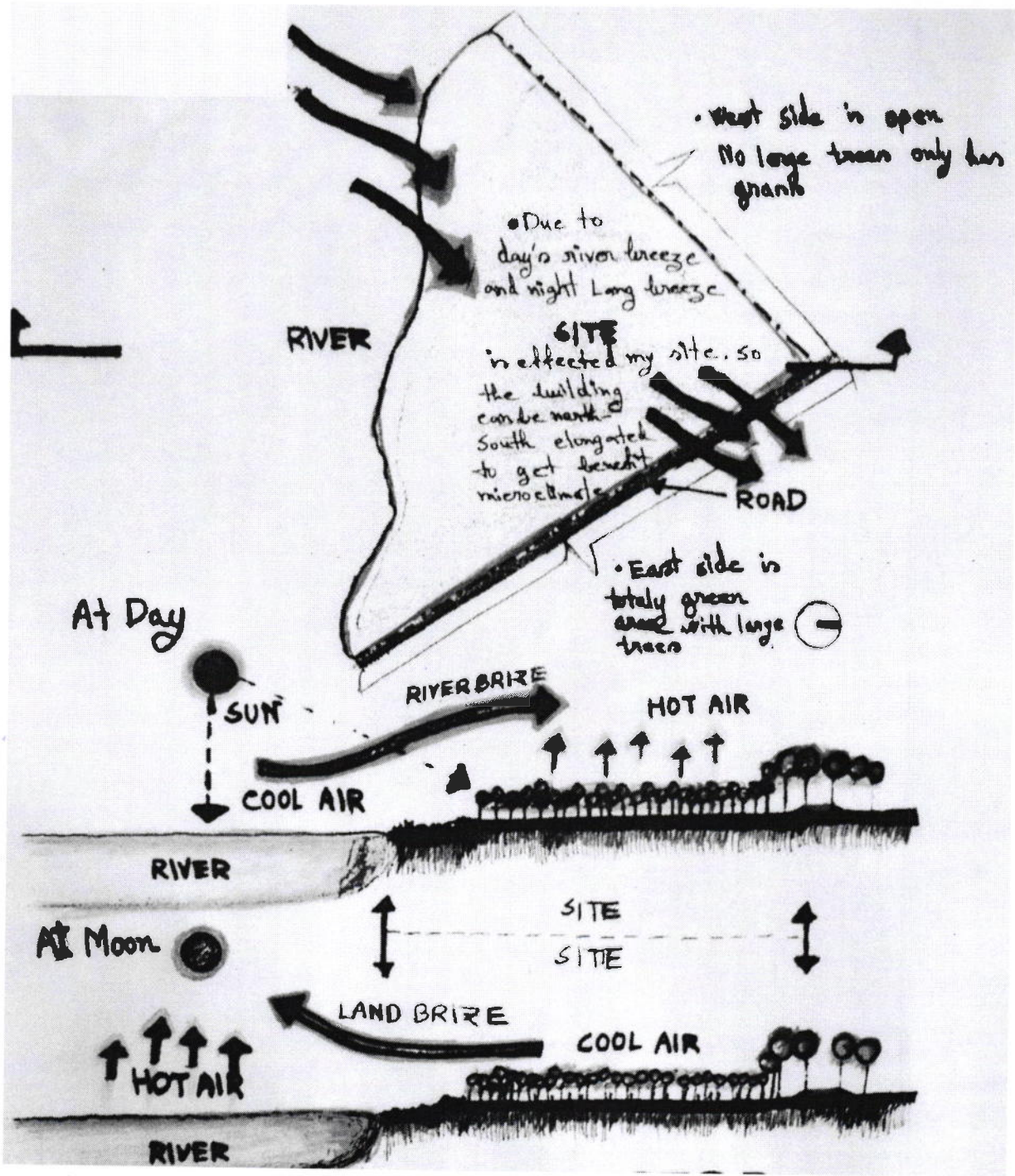
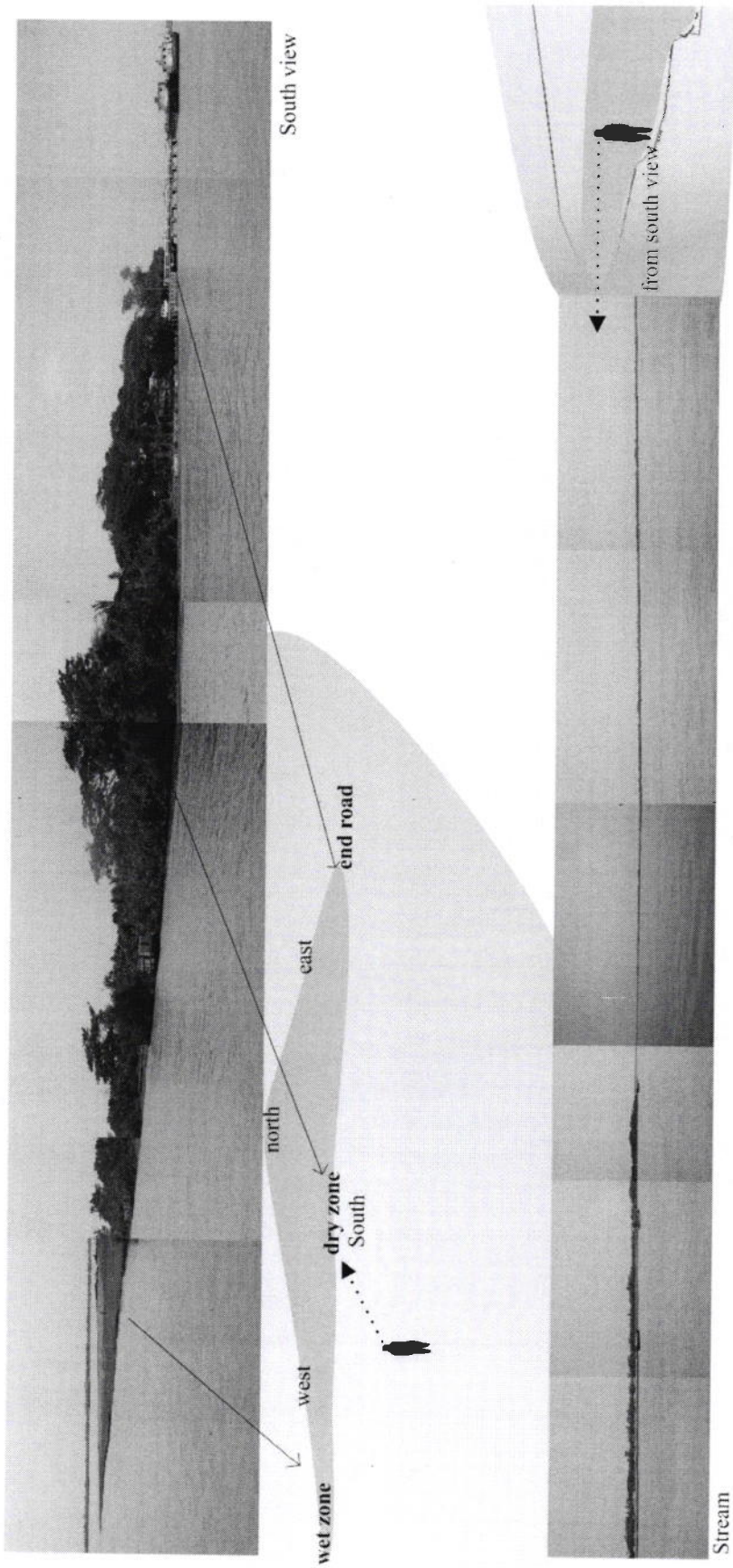


Figure 51: Micro Climate River breeze and land breeze factor



4.4 The physical environment of the site:

4.4.1 Climate:

Mongla is located on the south of tropic of cancer bounded by the river Passur. This river flows directly into the Bay of Bengal. It may be classified as tropical moist zone. The coolest temperature occurs during December-January and the warmest, towards the close of the dry season in May-June. The four main seasons are pre-monsoon (March-May), monsoon (June-September), post-monsoon (October-November) and the dry winter (December-February). The salinity of water also reaches maximum during this season. The monsoon users in high rainfall, humidity and cloud cover, sediment load and water levels of the river also rise. Occasional thunderstorms, cyclones and storms surges and rising salinity levels of water occur during post monsoon season. River Passur possesses low salinity eight months a year. Four times a day high tide and low tide occurs in the river.

4.4.2 Rainfall:

The rainfall increases from the west to the east. Eighty to eighty five percent of the annual rainfall occurs during the monsoon from May to September. Frequent and heavy showers occur from mid-June to mid-September.

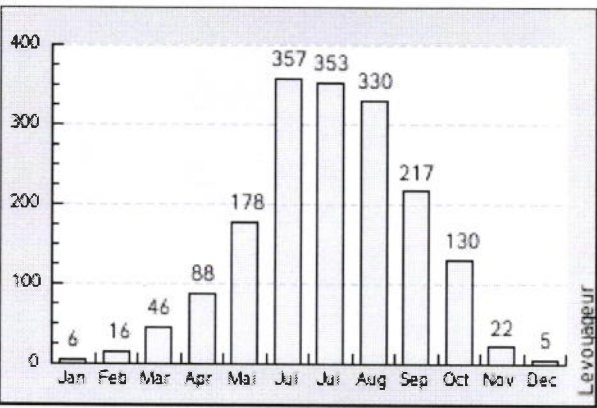


Figure 53: Average rainfall in mm at Mongla

4.4.3 Temperature:

High temperatures occur from the mid-March to mid-June. Temperature weather commences in the beginning of December and warmer weather sets in towards the end of February.

Maximum Temperature: 35.5°C

Minimum Temperature: 12.5°

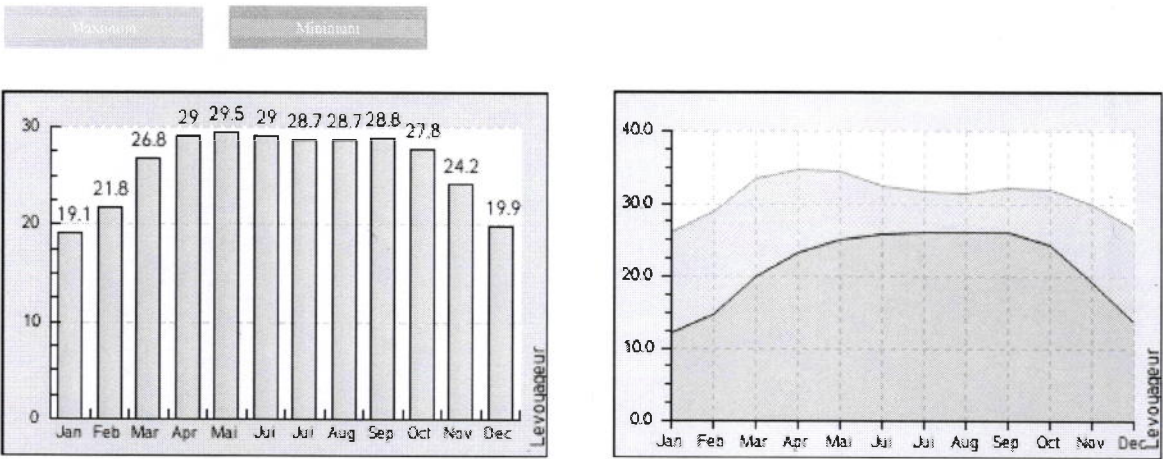


Figure 54: Average Temperature, Minimum and Maximum Temperature

4.4.4 Altitude:

Ranges from sea level to three meters.

4.4.5 Relative humidity:

June-October is the months with high humidity,while it is lowest in February. During the winter months,rainfall is very low, but thick mists occur contributing greatly to the humidity.

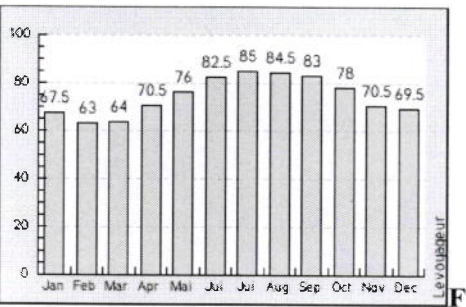


Figure 55: Maximum Humidity during in summer and pleasant in winter

4.5 Environmental consideration:

4.5.1 Wind:

Wind speed in Mongla always remains maximum in 999.9. So that wind speed can be effect to my site. Both positive and negative effect in seasonal.

4.5.2 Cyclone:

Cyclones in the Bay of Bengal usually move northwest in the beginning and then curve eastwards. According to National Encyclopedia of Bangladesh reminder that Sundarban area are protected the maximum southern part from cyclone storm tracks. Because Sundarban storm surge is 39feet to 41 feet. For that reason, Mongla is also become a safe zone.

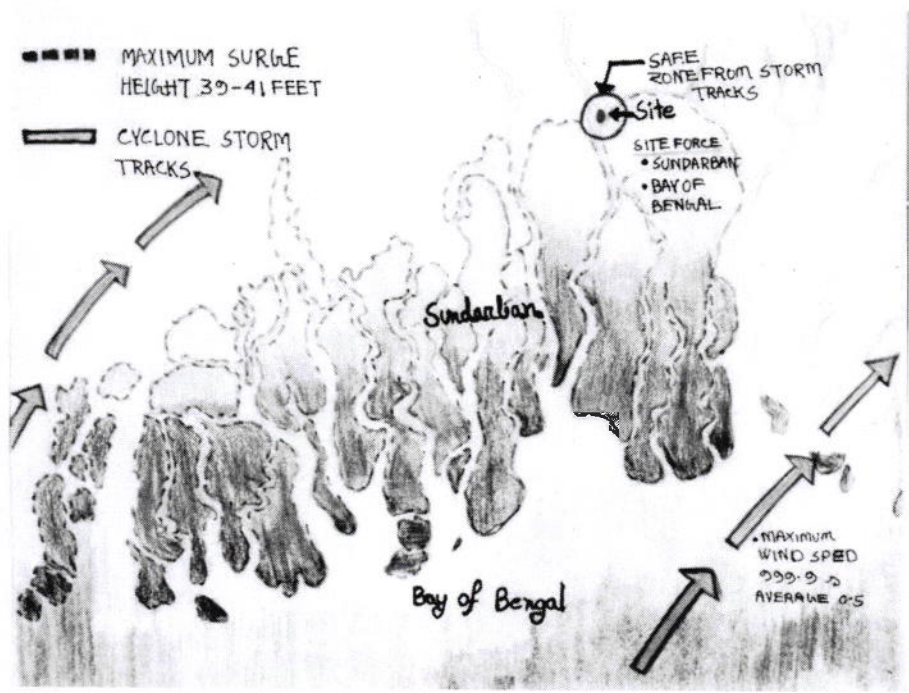


Figure 56: Mongla free from cyclone storm tracks

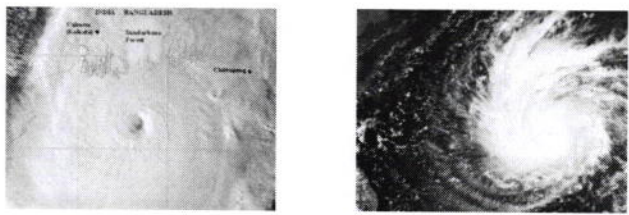


Figure 57: Maximum Surge height at Mongla

4.5.3 Sea level pressure:

According to weather forecast at Mongla, October is the maximum sea level pressure and minimum pressure in May. The average pressure is 1006.2. My site is close to river so that sea level pressure have to concern to the design.

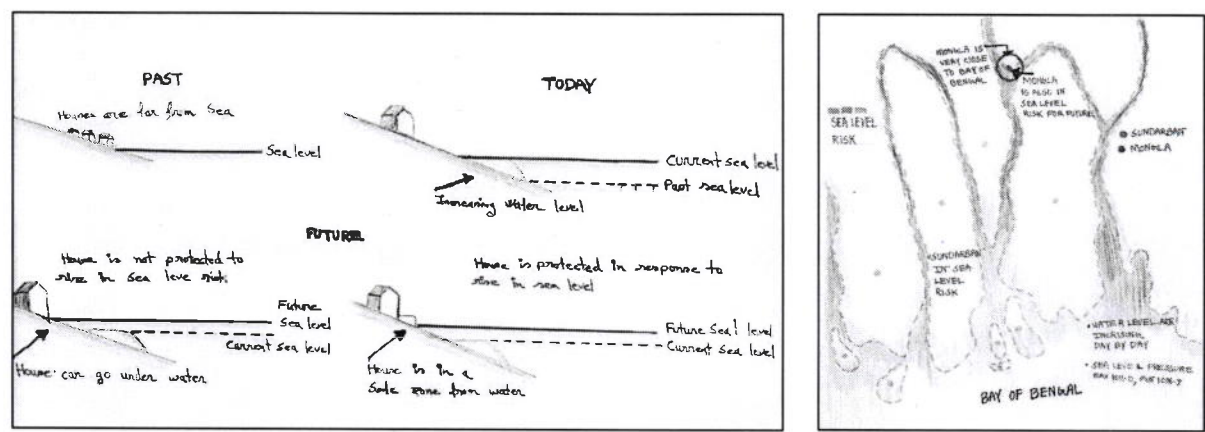


Figure 58: Changing of river level in Bangladesh and Sea level risks at Mongla

Global Warming is the main reason for sea level rise and maximum risk in Bangladesh in southern part. On that point Mongla is also in the risk for future. Water level is increasing day by day so that consideration should be in main urgency in design.

4.5.4 Site force:

Both Sundarban and Bay of Bengal are close to my site and maximum impact can be approaching the site. So that Sundarban and Bay of Bengal is the major site force.

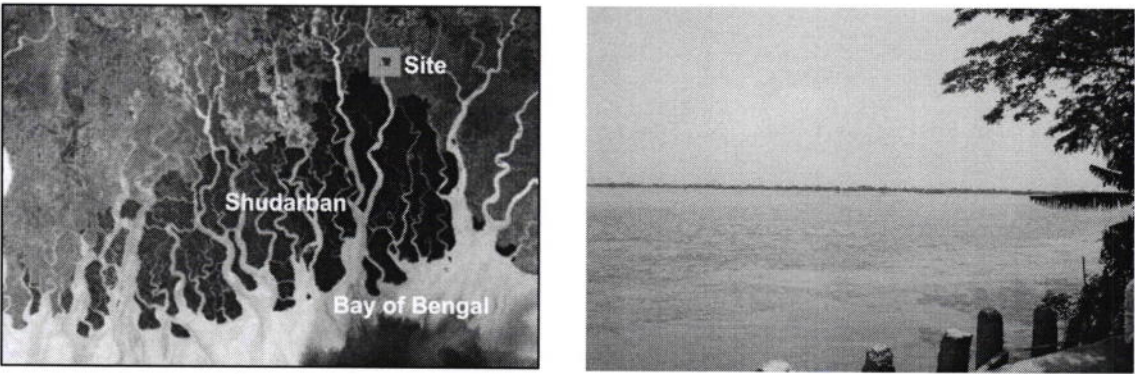


Figure 59: Forces of the site

4.6.1 Implication Observation of the site in a chart:



Factor	Consideration
Orientation of the site	The site is North-South elongated and the river is at south of the site. As the site is south facing all the major attraction and opening will be towards the river. Also Shundarban can be viewed from south of my site so the cottage can be placed in north south direction.
Frontage of the site	The site has two frontage. At east there is a high way road. So, it is possible to give different vehicular pedestrian access to the site from the road side. Beside that the riverside can be used as the secondary entry of the resort.
Micro climate	Breeze coming into the site affect the ventilation of my site. The resort can be north south elongated to get the full benefit of micro climate.
Level of the site	There is an existence of two major levels in the site. Among them one level is dry which is equivalent with the road side. Another level is located near the river which is around 2 feet lower. So that the wet part of the site design should be allowed minimum 2 feet from ground level.
Tidal Height	The maximum tidal height of this area varies from 2 feet 3 feet. So the building should be above or at the protective level.
Vegetation	At present approximately 80% surface of the site has been filled with vegetation. These trees create shading inside the site throughout the day. A large number of trees which have been planted or grown naturally across the site are an important part of the place which needs to be considered during the architectural design.
Views	There is a view at south side of river stream and Shundarban. North-West side also open and North-East has road. So the opening and interaction space can be at four sides of the site.
Traffic & Noise	There is no traffic & noise problem to my site which make the site comfortable.

4.7 Project Program

Program Basis:

- As new resort it is necessary to ensure that all the essential functions are put into immediate operation from the time of launching, even though the initial volume of demand may be limited and the operation, in the first stage, may not be commercially feasible. At the same time the resort must present an impression of vitality to attract support.
- There are two types of target visitors-
 - a) Students/Couple/Friend group (Both local & foreign)
 - b) Family/Corporate office Group etc. (Both local & foreign)
- Restaurants facility is another good option for revenue earning.

Key Functional Requirements:

- Cottage 
- Suit 
- Entrance Hall
- Multipurpose Space
- Recreational Space
- Restaurant
- Resort Office
- Watch Tower
- Shops
- Parking
- Ancillary Facilities

4.7.1 Importance of the function:

- Public Facilities:

Type	Description
Lounge	When a visitor first reached to the resort they go to the reception for further information. If reception is occupied they can wait in the lounge. From waiting lounge there should have the view of the river.
Information Gallery	<p>There are much information about Mongla and Sundarban which common people do not know. Like</p> <ul style="list-style-type: none">-Due to Global warming there has been lots of damage in shundarban . This is also causing natural disaster like cyclone, sider, haricans etc. If this information is known by the common people, they could be more aware about the Global warming.-The information to prevent Global warming could be given to the people.-Like Sundarban is one of the few forest in South Asia which is unique in beauty and nature. It abounds with a wide range of flora and fauna.
Multipurpose space	Now a days there are many plants, birds and animal which have vanished from Sudarban because of Global warming. So there should be exhibition space where the sculpture of these things should be exhibit. Beside that occasionally the local people would arrange a

	cultural program where they can participate. So that tourist can enjoy also get knowledge about the Sundarban lifestyle.
Watch tower	As the site is close to river and the Sundarban forest, so for the security purpose of the tourist Watch tower is important.
Recreational Space	To recreate the tourist there will be some facility. Such as Boating, Fishing, and Swimming, Golf practice space, Tennis court, outdoor space and restaurant and also to enjoy the sun set and sun rise there has some deck.
Shop	There are many local things (honey of Sundarban, handmade things by local people) which are very famous. So there would be souvenir shop to sell these local things.

• **Private Facilities:**

Double Rooms	Most of the tourist used double rooms. So that the number of double rooms in my resort are more in quantity compared to other rooms.
Suits	Many families to go to Mongla to visit Sundarban and stay in this resort in a suit which cheaper. And the suit also includes a Veranda, living, kitchen. So this suit is more comfortable and economic for a family.
Restaurant	. In door restaurant. -view is very important. -view of the river or Sundarban. -natural wind and light.

	-Outdoor restaurant. -Deck(to enjoy the natural scenic beauty)
Administration	For the well being of the resort there are a administration sector which look after the resort manager.

4.8 PROGRAMME:

Tourist Eco Resort at Mongla

Key Function	Category	Total Area (sqft)
Cottage(Double)	Residential(Private)	16200
Suits	Residential(Private)	20500
Entrance Hall	Public	4590
Exhibition Space	Public	7475
Watch Tower	Public	1820
Cultural Space	Public	3500
Restaurant	Public/ Private	4940
Souvenir Shop	Public	1000
Health Facilities	Private	800sft
Front Officer	Public	1620
Kitchen	Staff	7180
House Keeping	Staff	3640
Loading Dock	Staff	1000
Employee’s Area	Staff	1100
Parking	Semipublic	5100
Others		2015
Total Area Required		82480
Total Area of the Site	13.13 acre	561600

4.9 Program Analysis:

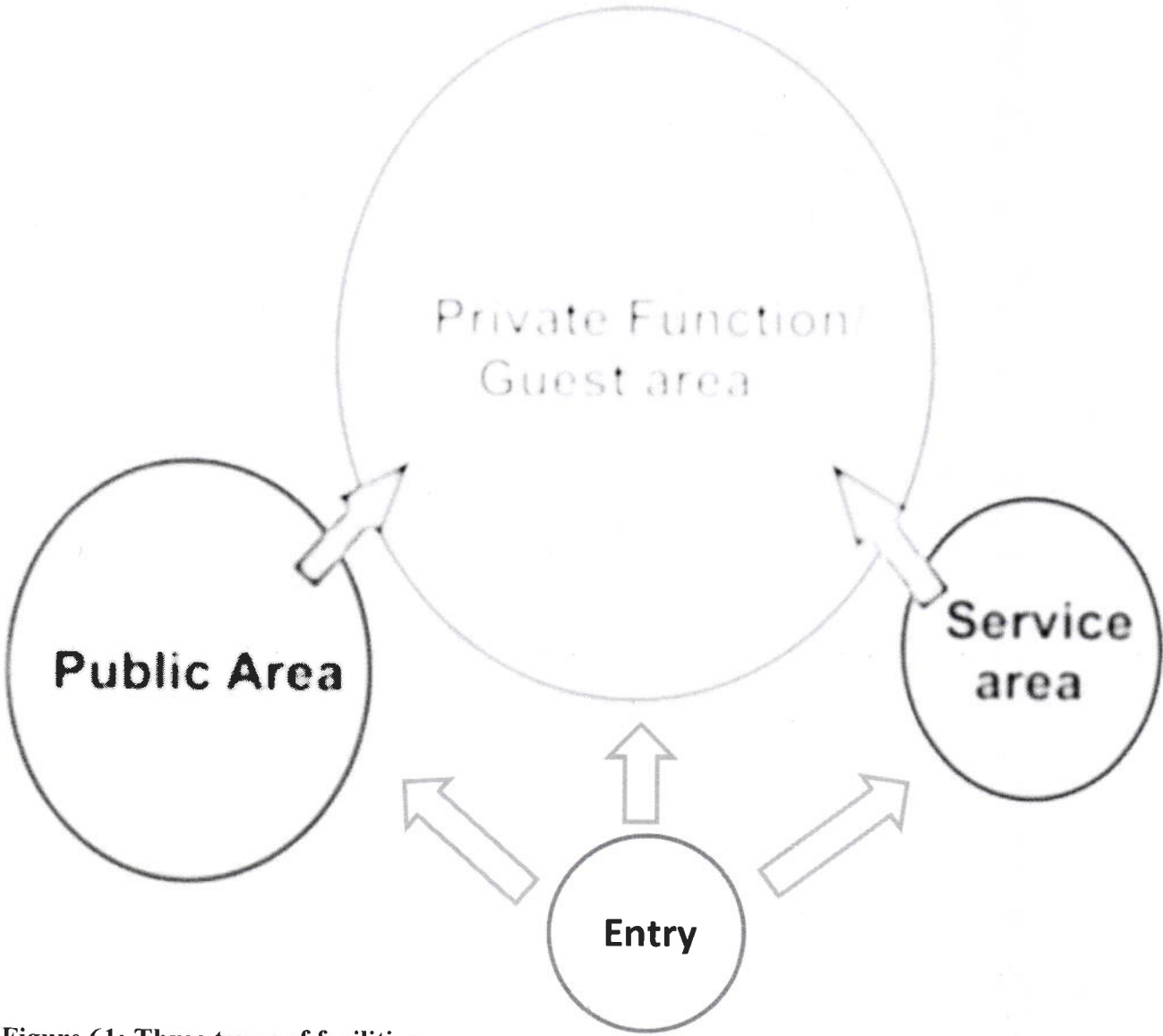


Figure 61: Three types of facilities

<div></div>	Private 100100 sqft
<div></div>	Public 26000 sqft
<div></div>	Service 7000 sqft

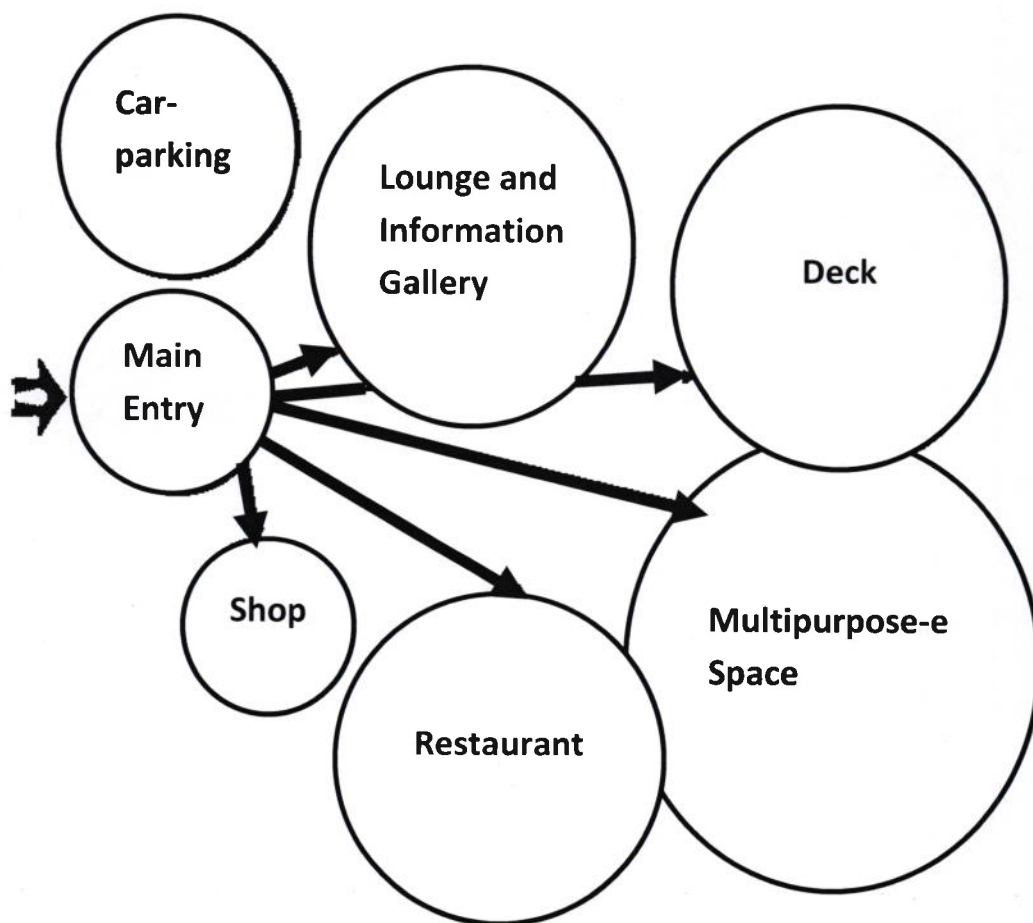


Figure 62:Public functions

- **Public:**

- Main entry
- Lounge
- Information Gallery
- Multipurpose space
- Restaurant(Indoor and outdoor)
- Shop
- Deck

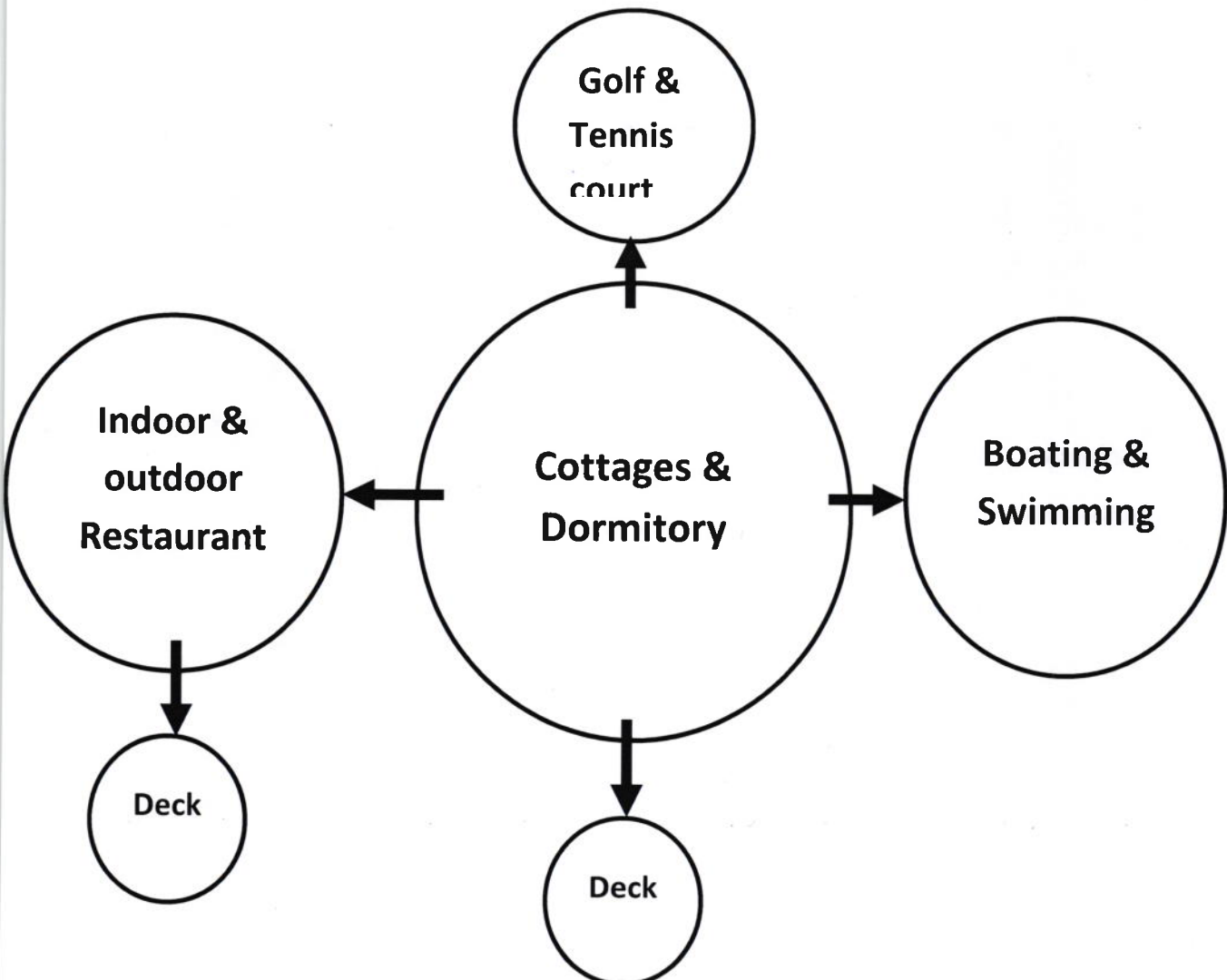


Figure 63: Private functions

• **Private: Guest room:**

- Cottages
- Dormitory

Recreational Facility:

- Boating
- Fishing
- Swimming
- Golf practice space
- Tennis court

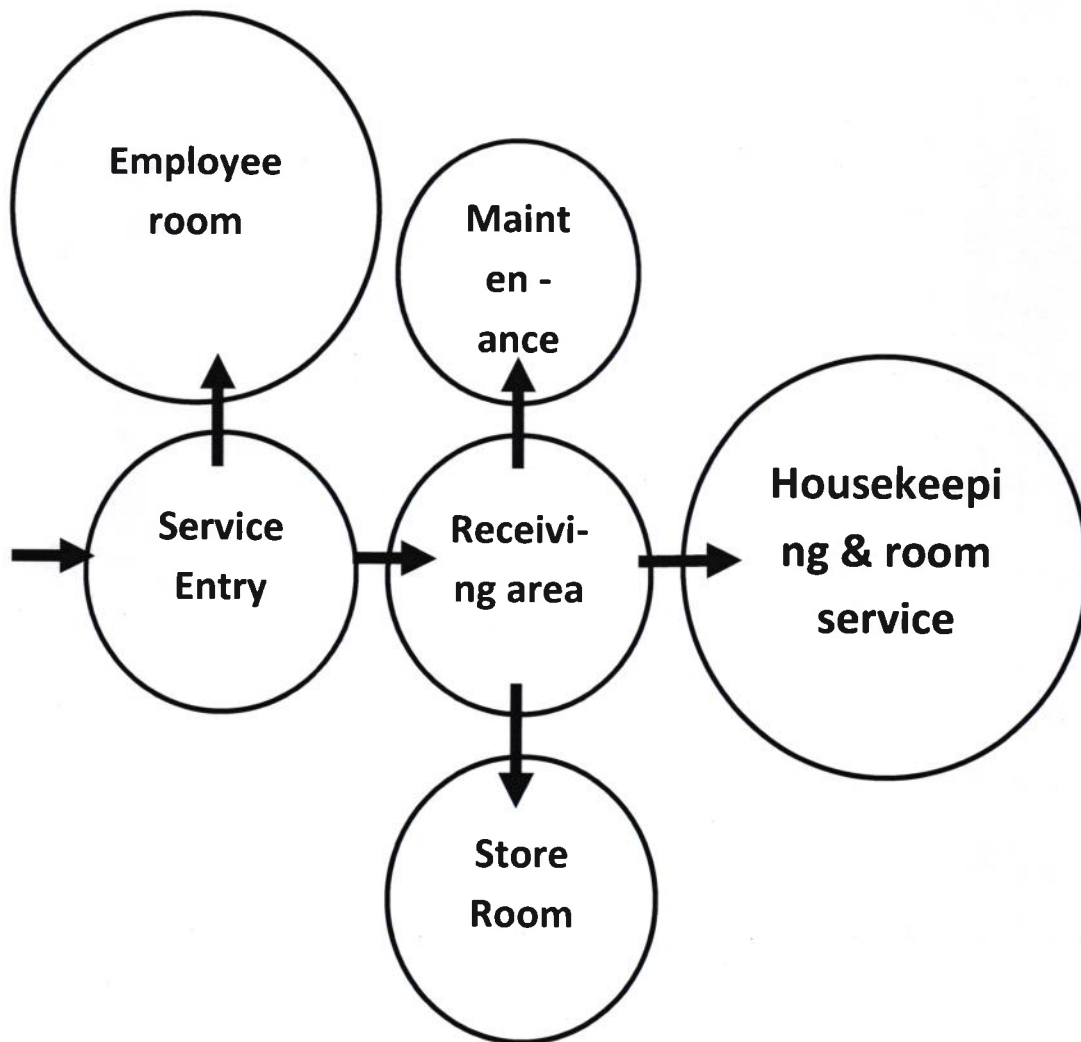


Figure 64: Service area

• **Service:**

- Administration
- House keeping
- Room service
- Watch tower
- Employee room
- Enginearion and maintenance room

4.10 Functional space relationship: In this section major functions and their functional flow diagram will be shown diagrammatically.

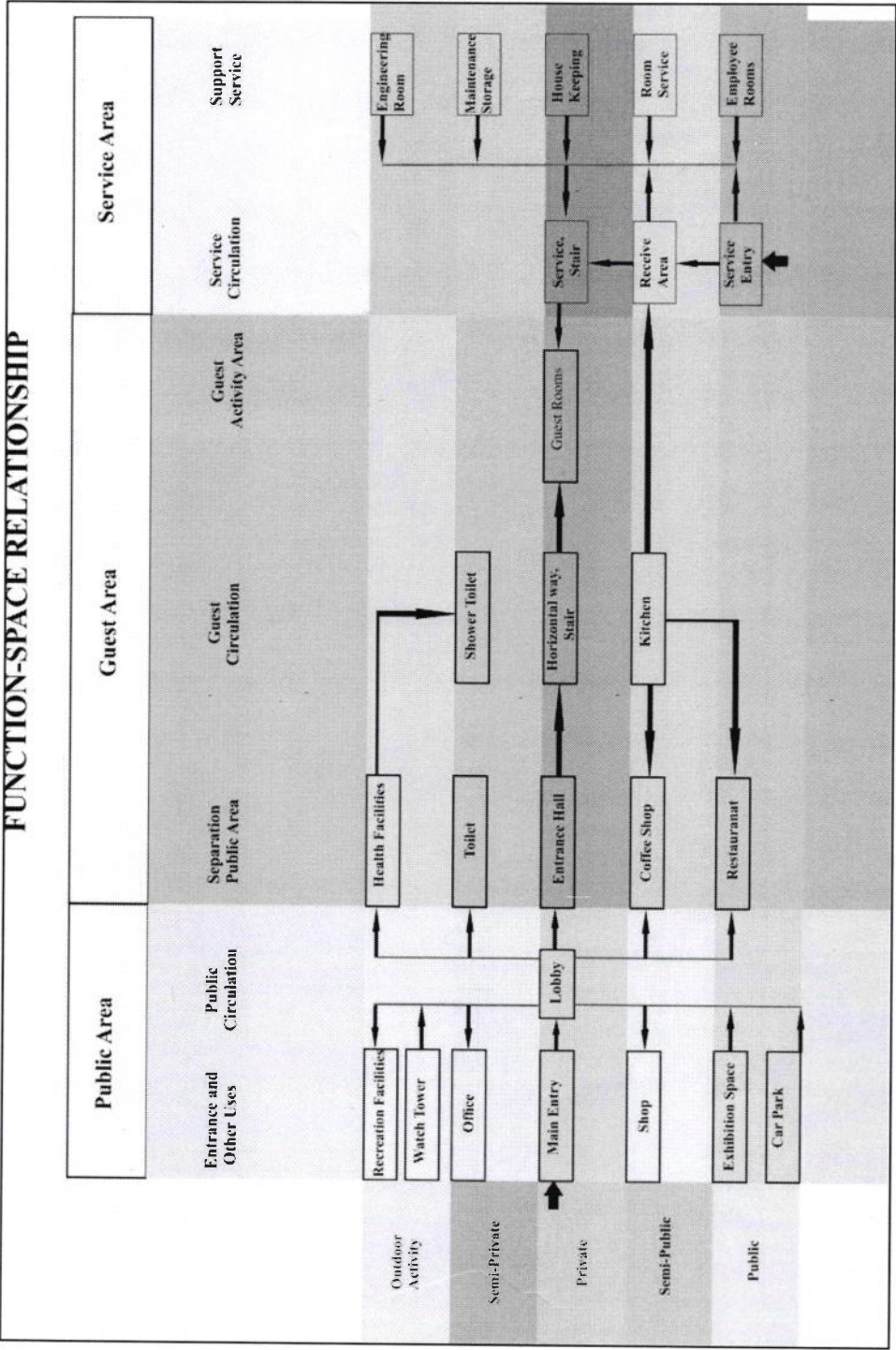


Figure 65: All the functions

4.11 Functional Analysis for Cottage:

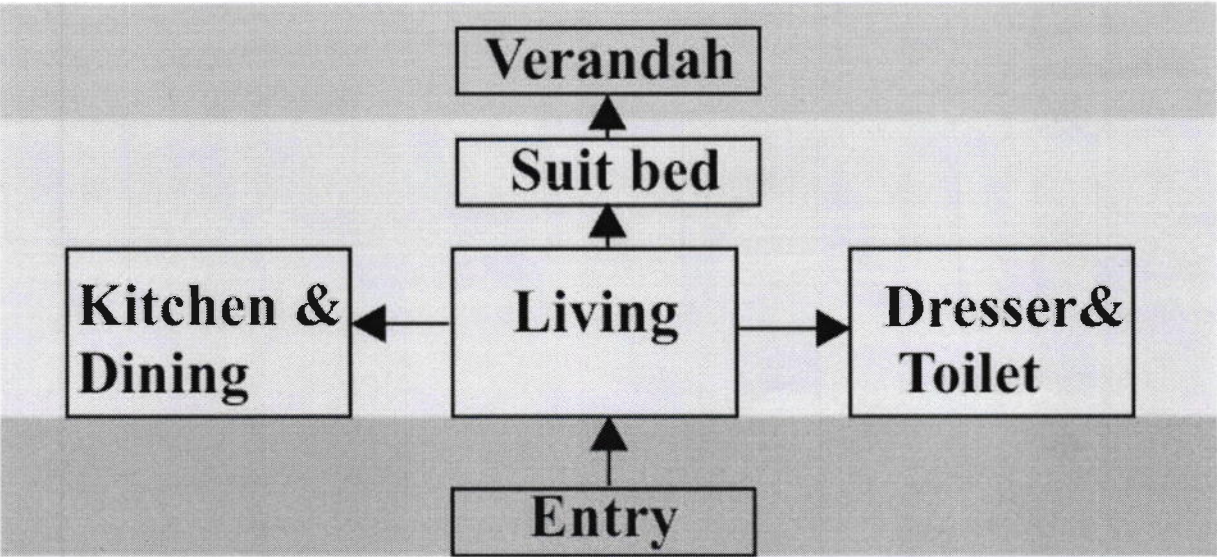
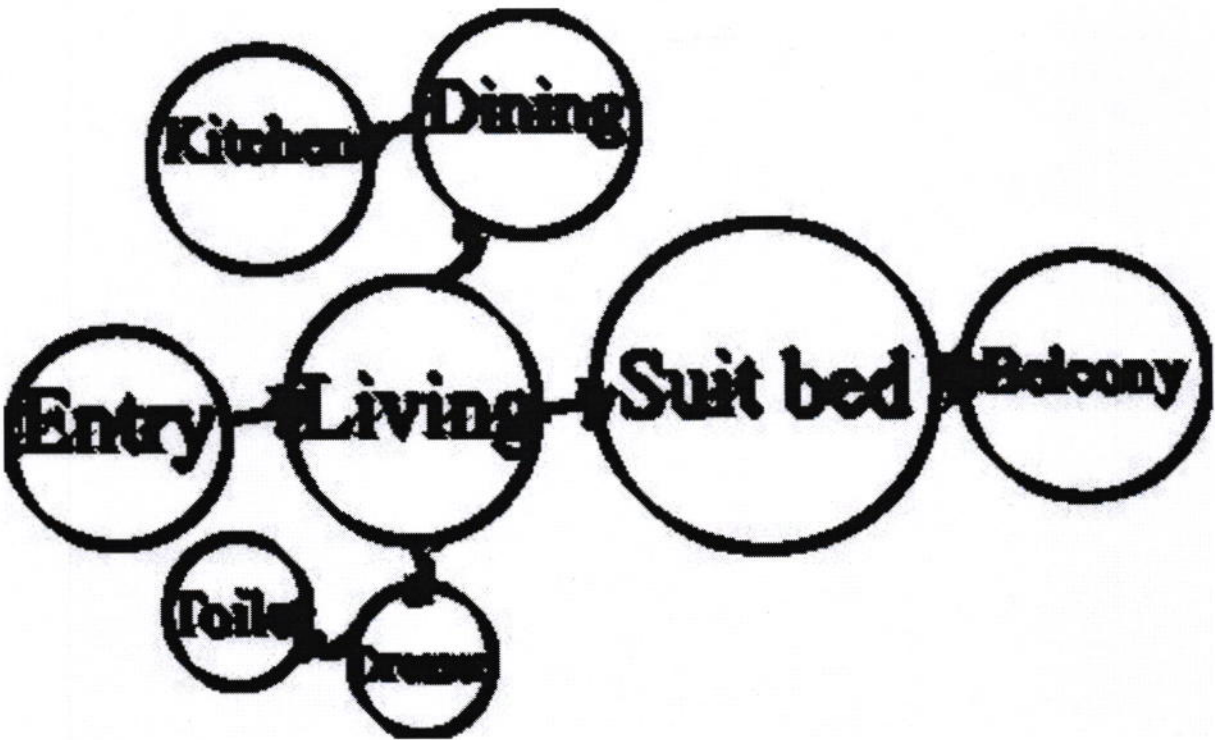


Figure 66: Function of Suit cottage

Functional Analysis for Cottage:

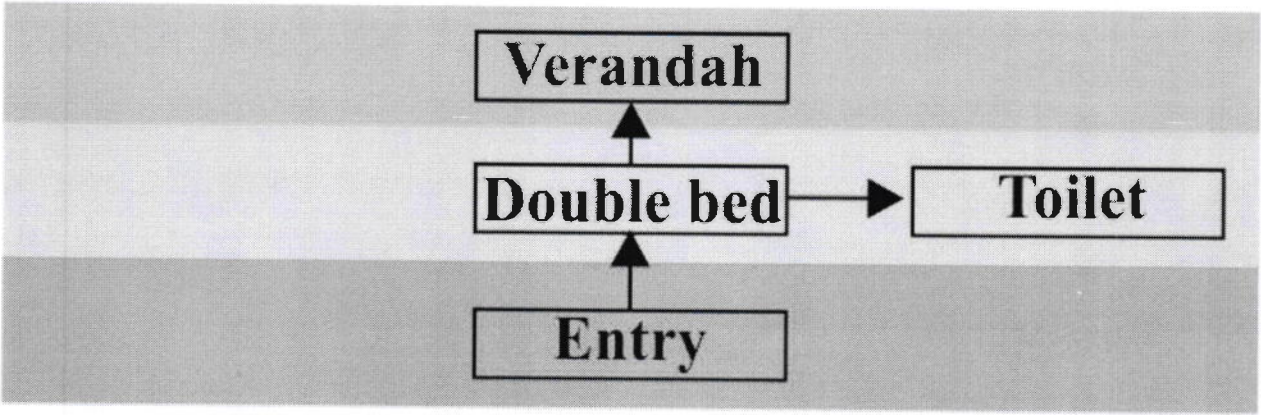
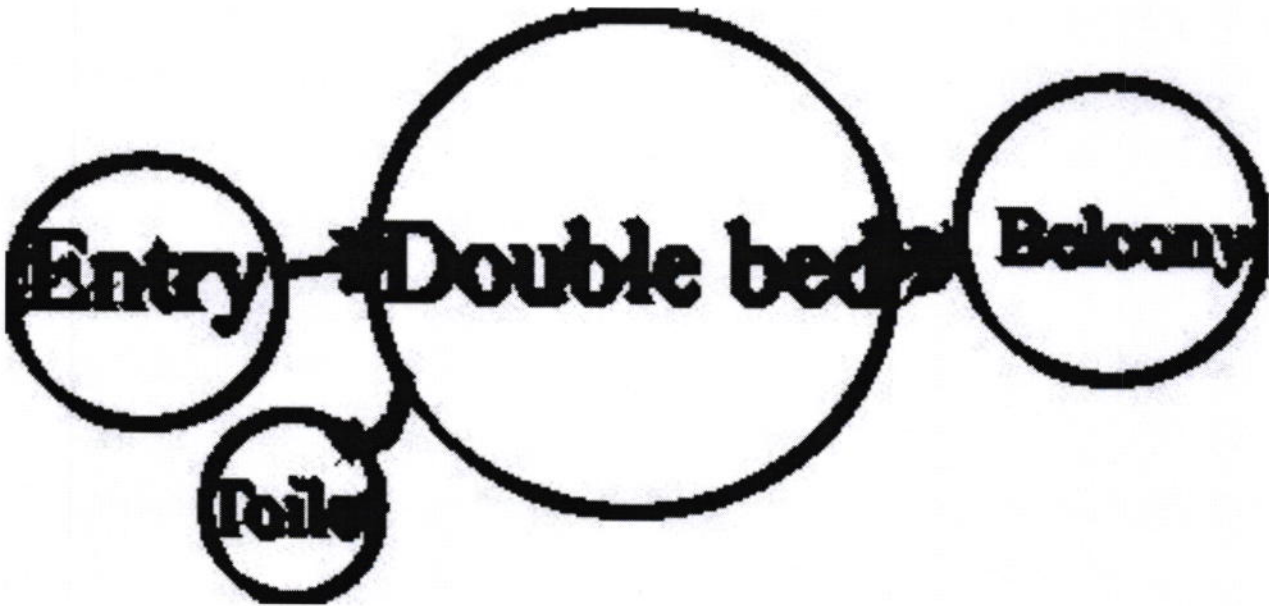


Figure 67: Function of double cottage

4.12 Functional Analysis for Restaurant:

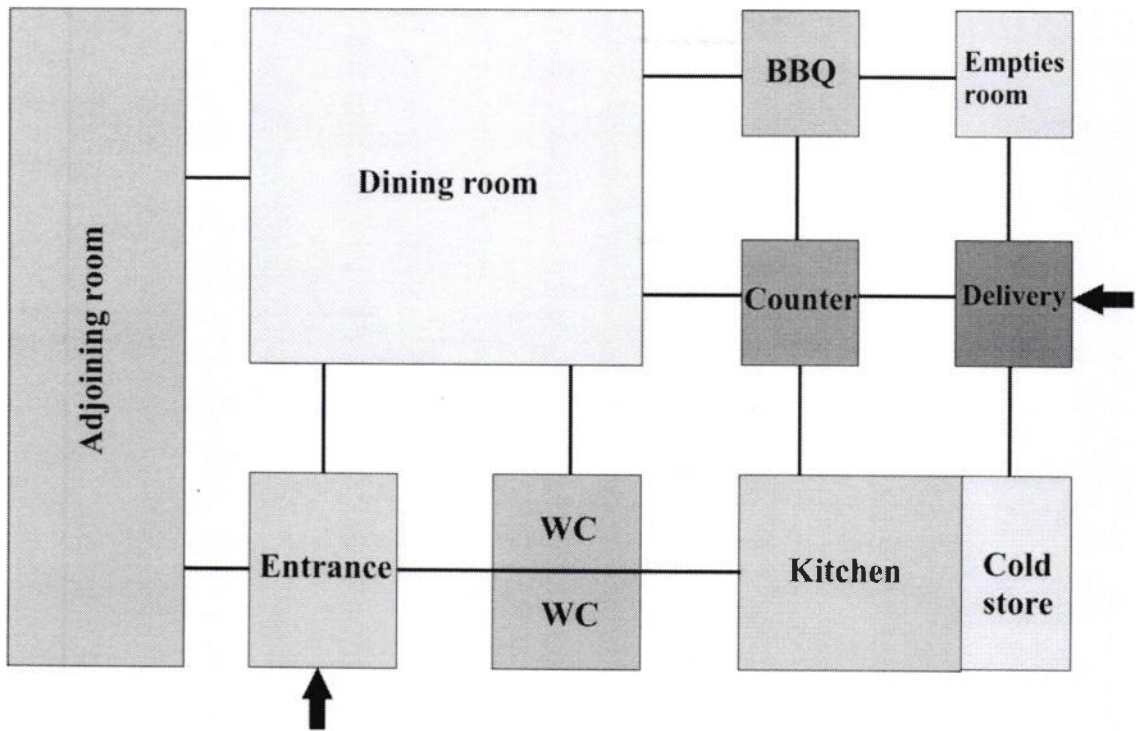


Figure 68: Restaurant

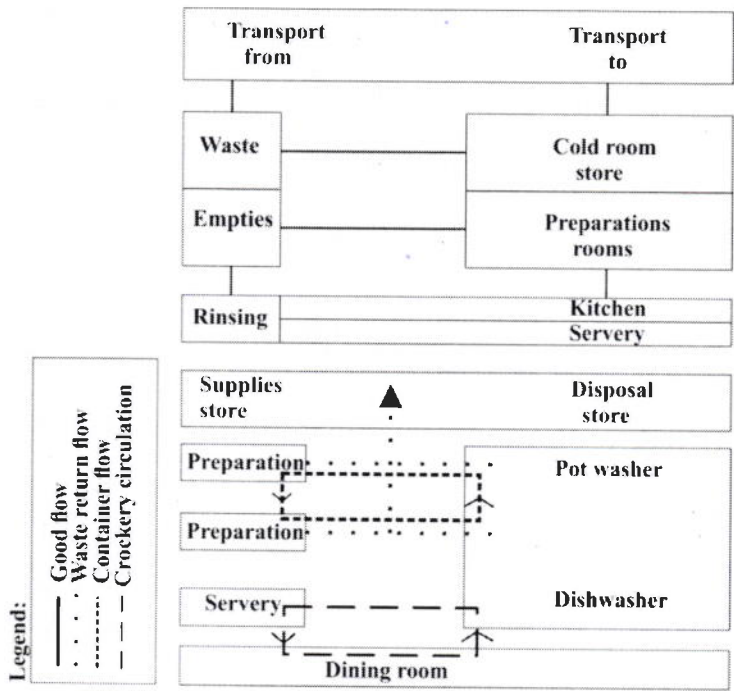


Figure 69: Restaurant Kitchen

Chapter 5: Design Consideration

The things I have considered while developing my design concept are discussed in below:

- Implementing the modern architectural ideas in a naturally sustainable way.
- Considering the climate and ecology of the surrounding sight while developing the architectural designs.
- Regenerate the Sundarban plantation in the resort
- To give an attention to the use of indigenous materials and tectonic style.
- Improve and establish a wider application of context responsive traditional architecture.
- Symbolizing the Sundarbans in the architectural concept of the resort.
- Establish an organized recreational facility and other to fit the demand of tourists.
- Improve and establish a playful and enthusiastic green environment within the resort.
- To create an intermediate space for the tourists visiting Sundarbans.
- To promote tourism in the Sundarbans without disrupting the ecological balance of the forest.

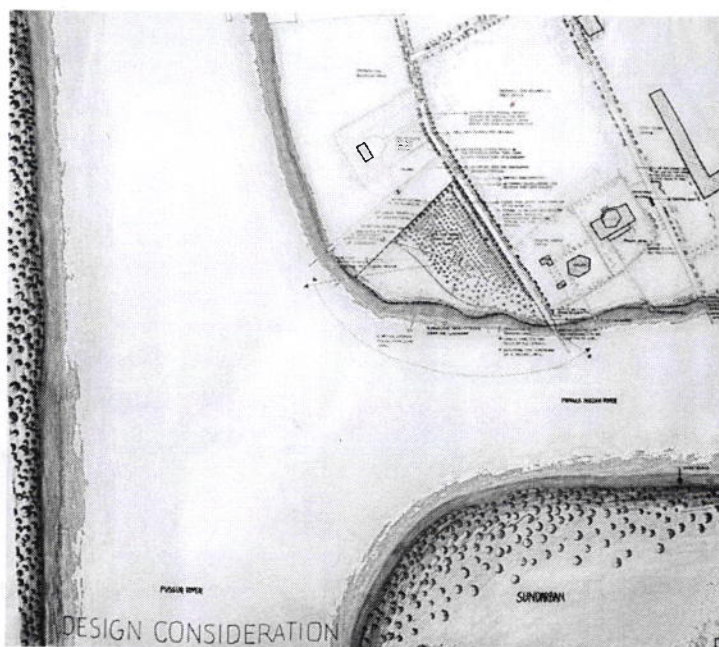


Figure 70: Design consideration based on the site and the function

5.1 Concept of the tourist resort at Mongla

While developing the concept of tourist resort at Mongla I have considered two major facts regarding the Sundarbans. The positive news is that as the largest mangrove forest of the world the popularity of Sundarbans is increasing day by day among the tourists. But on the other hand Sundarbans is gradually losing its beauty due to the climatical changes. I have balanced these two extremes while generating the concept of the resort. Firstly, I have planned to develop a nature based resort capitalizing the beauty of Sundarbans. Secondly, the idea is to regenerate the beauty of Sundarbans inside the resort through tree plantation. Through this concept the resort can contribute in both ways. Firstly, it may help the visitors to experience the beauty of the forest while staying at the resort. Secondly, the resort can play a part in replenishing the lost beauty of the forest. **So my concept is to develop a “Resort in natural settings” by maintaining the characteristics and benefits of a nature based resort.**

How to regenerate the beauty of Sundarban in my site:

The Sundarbans consists of fresh water swamp forest, salt water mixed forest, brackish swamp forest (true mangroves), mangrove scrub and littoral forest. . The mangrove of the Sundarbans is dependent on natural regeneration for its existence. Natural regeneration refers to renewal of a tree crop by natural means, as opposed to artificial regeneration by means of planting or sowing as done in mangrove plantation. Over the greater part of the forest, sprout recruitment is sufficient for replacement of the harvested trees. So, artificial regeneration of the mangrove forest is not required.

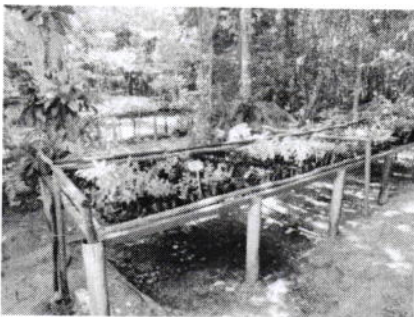


Figure 71: Plantation of littoral trees

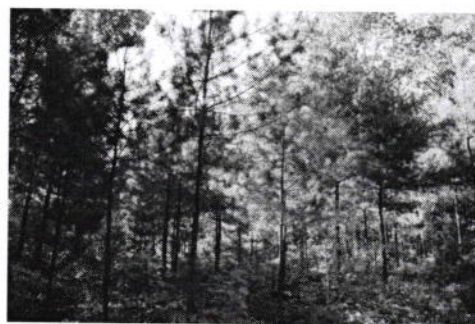


Figure 72: littoral trees are high and thin

However, littoral forest which is an important part of Sundarbans can be regenerated. The littoral forests are coastal forests but they are not the same as mangroves. The littoral forests are separate and unique ecosystems that offer habitation to some birds. These forests are found on high but sandy grounds with thick vegetation along the mainland coast. The littoral forests are becoming degraded forests due to higher mortality caused by increased salinity. Examples of littoral forests can be thick mat of the Nipa Palm or Golpata (*Nipa fruticans*) by the side of almost all the canals. The proposed site for the tourist in Mongla is situated on the bank of Passur River which has a natural flow of water with less salinity. Littoral forest can be planted near the river bank, so I have the opportunity to develop a littoral forest on the bank of the Passur River. This idea can be beneficial in developing a natural surrounding inside the resort with the probability of lots of birds moving inside the resort area.



Figure 73: The littoral forests are separate and unique ecosystems that offer habitation to some birds.

Influence from other resort:

While selecting materials for the resort I have been influenced by the case studies I have done. In all three resorts I have studied natural materials has been used successfully to develop the structure. The materials those are commonly used in those resorts are timbers, bamboo, coconut leaf, palm leaf thatch, concrete etc. These materials are very feasible in our country. At the same time by using these materials the resort can get economic benefits. So, I have planned to use these natural materials in my resort.

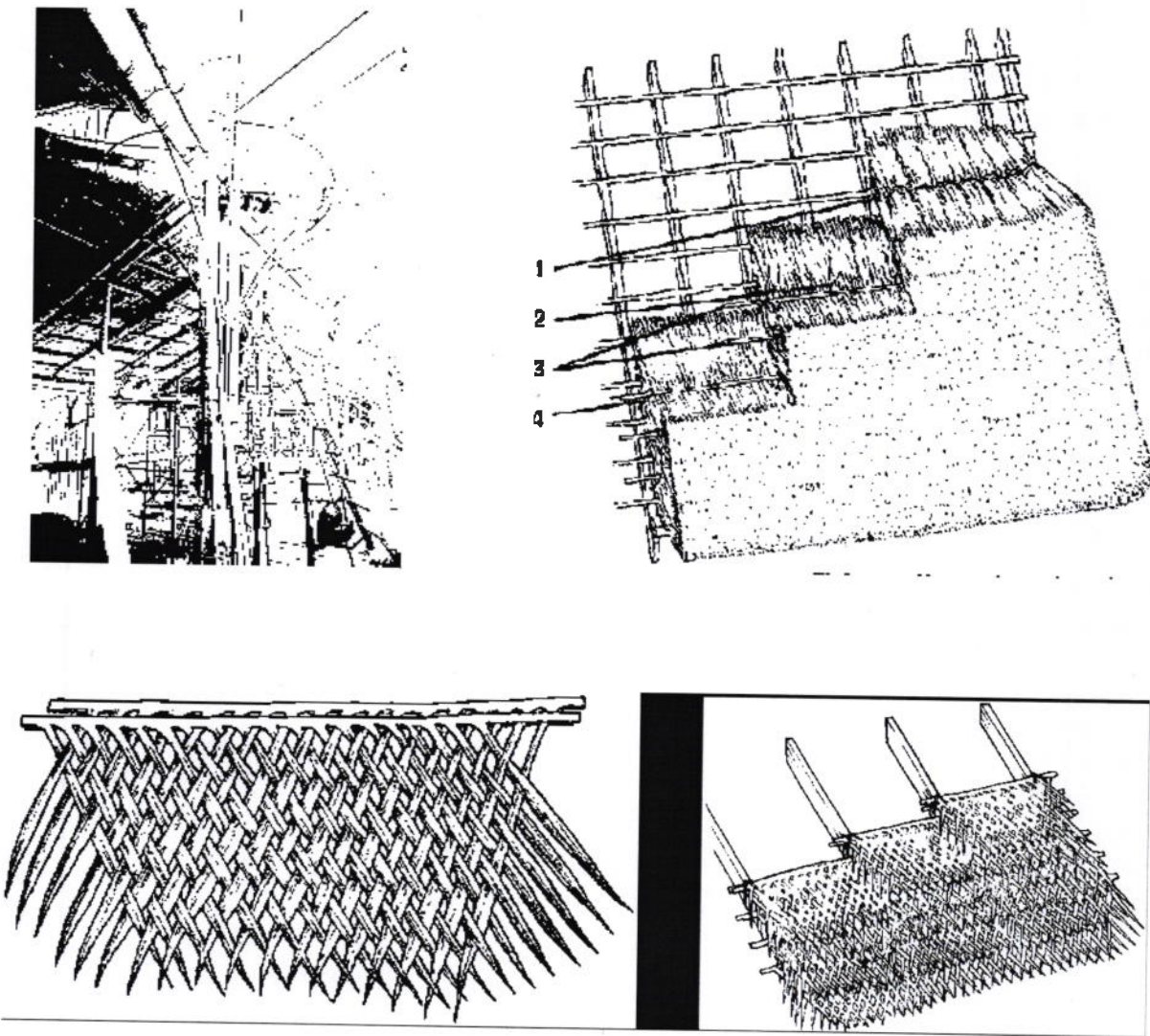


Figure 74: By using timbers, bamboo, coconut leaf, palm leaf thatch materials the resort can get economic benefits.

5.2 Zoning:

Private

Public

Service

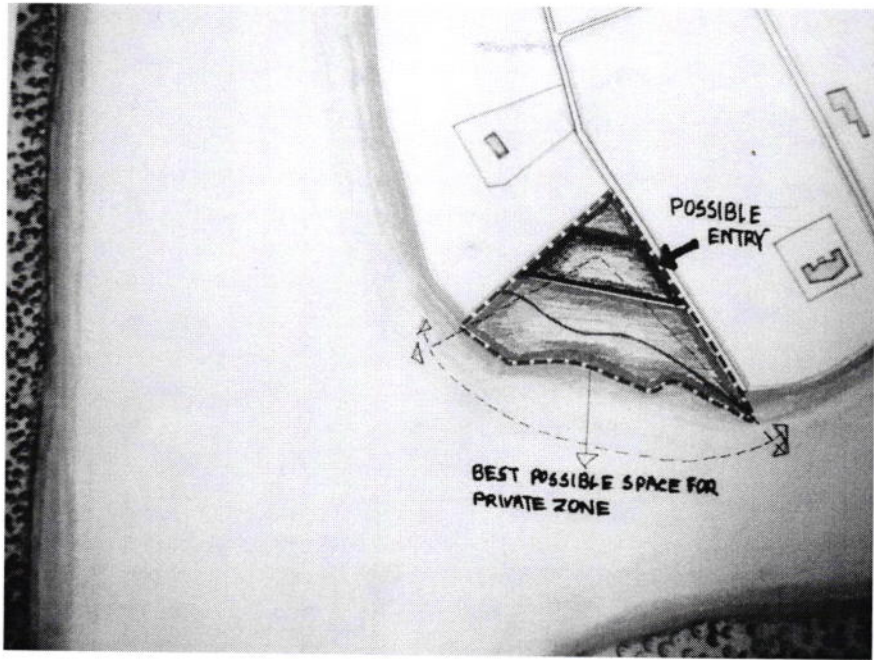


Figure 75: Phase 1

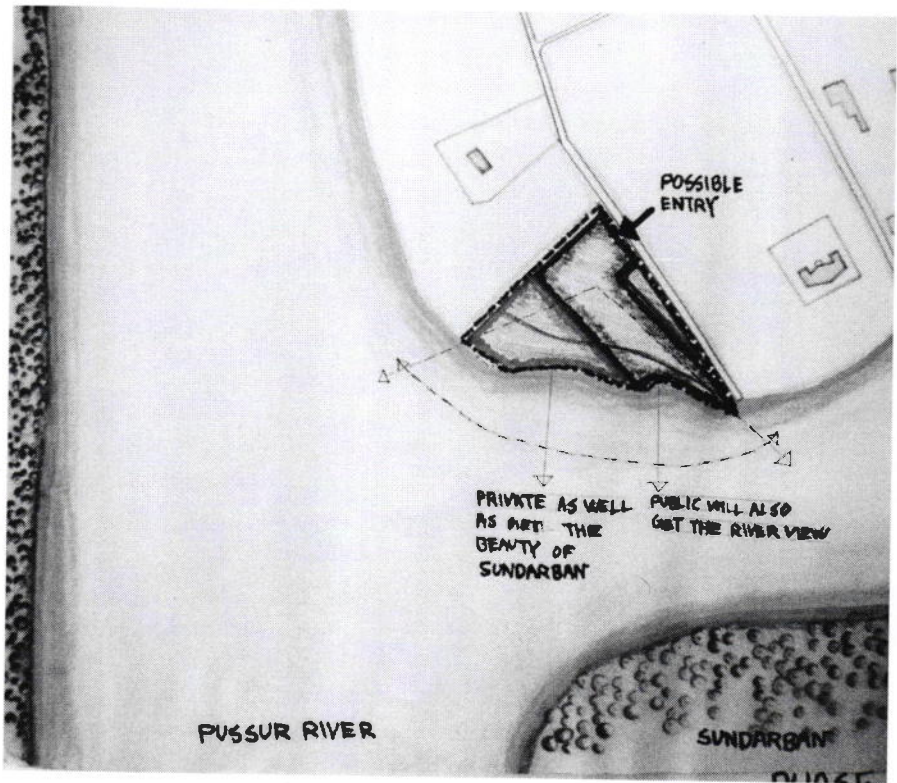


Figure 76: Phase 2

5.3 Babble:

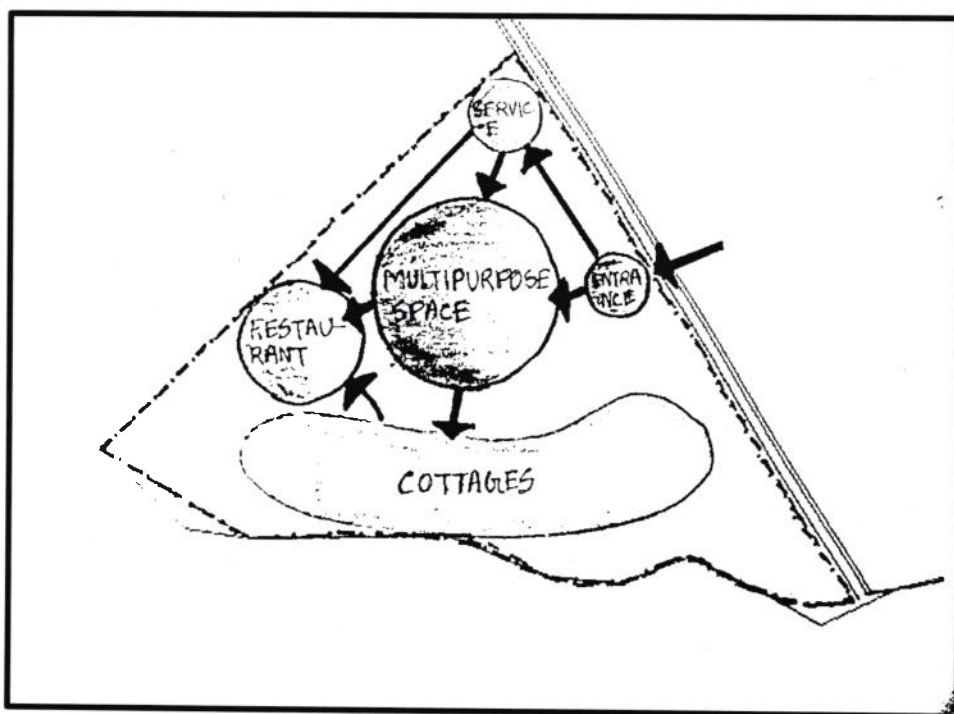


Figure 77: Phase 1

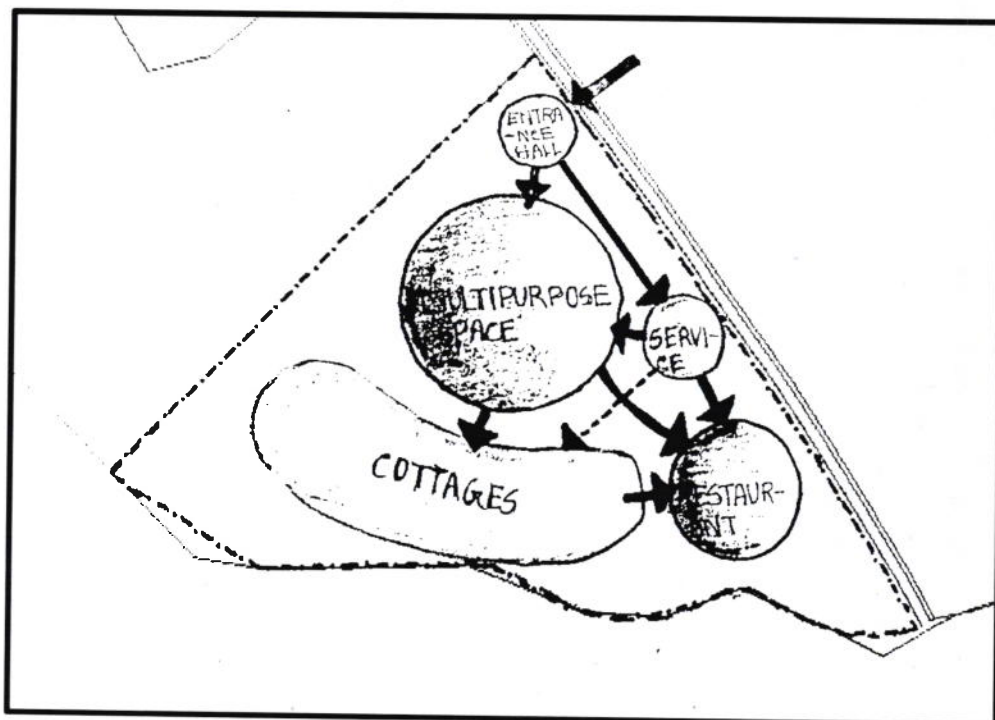


Figure 78: Phase 2

5.4 Conceptual layout:

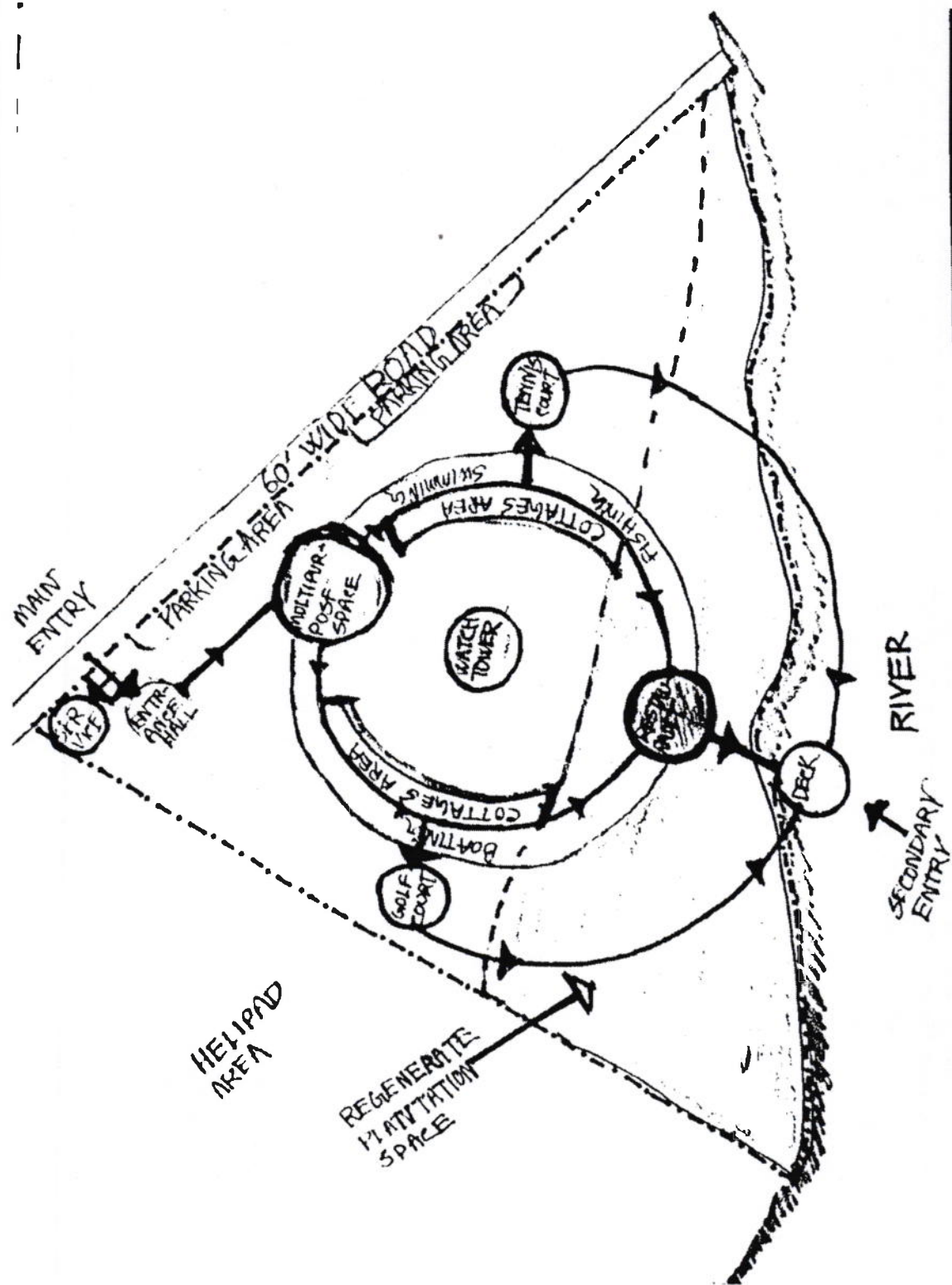


Figure 79: Conceptual layout with the functions

5.4.1 Conceptual layout of Individual cottages:

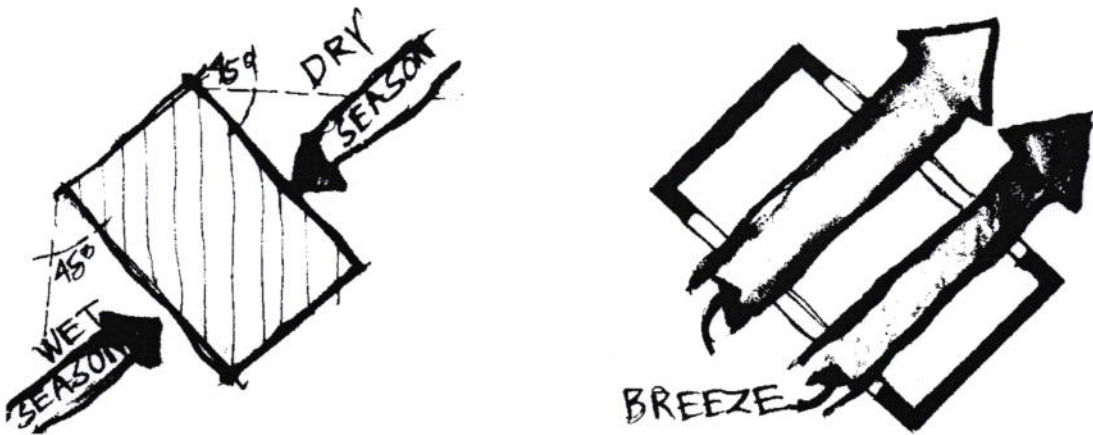


Figure 80: Individual Cottages elongated in 45degree angle to get proper seasonal wind direction and north south faced for the proper movement of light & wind



Figure 82: Landscape channeling may give the cool breeze in the cottage and also save the cottages from storm; Trees are giving low angle sun direction for natural shading

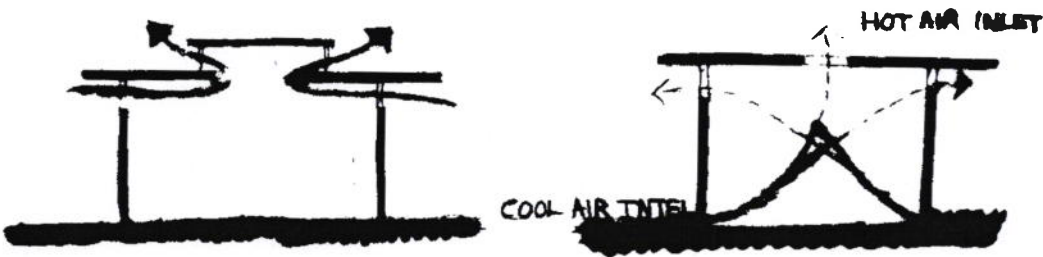
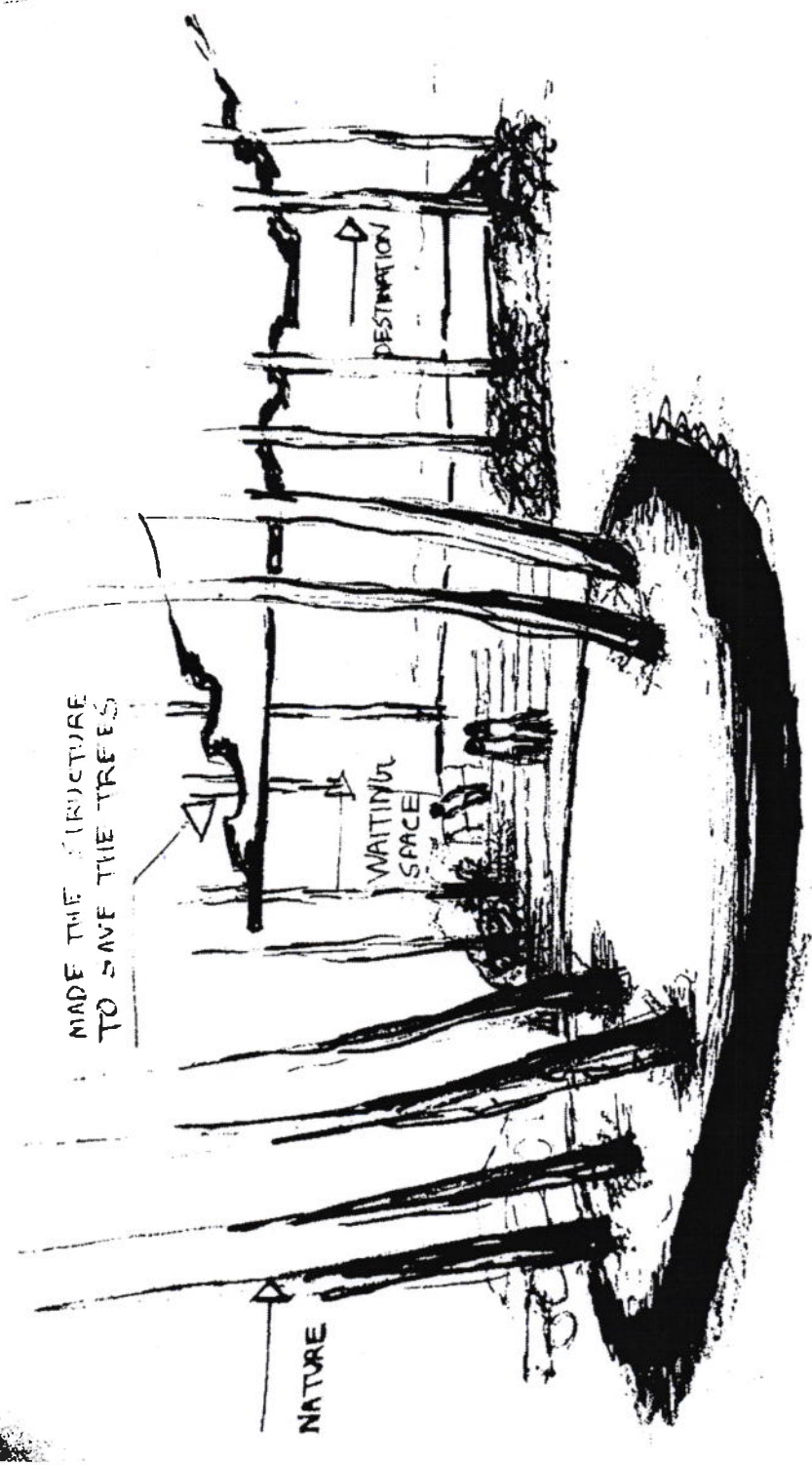


Figure 83: In the section opening can be this way to get cool air inside of the cottages

5.4.2 Conceptual sketches of the resort:



A NATURE BASED RESORT PROVIDING AN INTERMEDIATE SPACE
FOR THE TOURIST BY HARMONIZING WITH THE BEAUTY OF SUNDARBAN

Figure 84: Conceptual sketch of entry space to the Resort



Figure 85: Conceptual sketch of the public space or restaurant space to the Resort



Figure 86: Conceptual sketch of the Cottages with semi outdoor and outdoor space to the Resort

